IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application No. 10/083,260

Applicant: Winkler, et al.

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DECLARATION UNDER 37 C.F.R. § 1.131
OF MARK A. WINKLER, TROY D. FRIDLEY AND DENNIS R. HALL

As a co-inventor of the subject matter disclosed and claimed in the instant application, I hereby declare:

1.   I, along with the my named co-inventors of the instant application, conceived the present invention prior to October 31, 2000, which corresponds to the filing date of U.S. Patent No. 6,429,773 (Schuyler), and diligently reduced the invention to practice.

3.   This Declaration confirms my conception and diligent reduction to practice of the claimed inventions, and is supported by attached illustrative materials that will be discussed where helpful.

4.   I am told and understand that corroboration of my statements is not required by the Patent Office's Manual of Patent Examining Procedure (MPEP) §715.07 (p. 700-283) ("[A]verments made in a 37 CFR 1.131 affidavit or declaration *do not require corroboration*; an applicant may stand on his or her own affidavit or declaration if he or she so elects.") However, it is felt that the attached corroborating documents may be helpful.

5.   I am also told and understand that the exhibits need not support all claimed limitations provided that any missing limitation is supported by this declaration itself per MPEP §715.07 ("An accompanying exhibit need not support all claimed limitations, provided that any missing limitation is supported by the declaration itself.") To this end, although the present exhibits do not necessarily illustrate all computing device screens or web pages as claimed by the invention, I hereby declare and affirm that the invention conceived as of October 31, 2000 included screens such as a graphical illustration of a vehicle's wheel and axle configuration, operable to associate fleet tire information to a particular tire on the vehicle, and also included user interface screens having a plurality of profile information entry fields, and that the continuing work on the invention prior to reduction to practice was consistent with such functionality and that the apparatus when reduced to practice was consistent with such functionality.

6.   As corroboration of the conception and diligent reduction to practice of the present invention, attached to this Declaration are true and accurate copies of (1) pertinent pages from "IDEA FEASIBILITY FORM" Rev. 9, dated July 24, 2000 (Exhibit A); (2) pertinent pages from "Chicago Meeting Notes, GFAT – Global Fleet Analysis Tool" Version 1.00, dated August 17, 2000 (see p.3) (Exhibit B); (3) pertinent pages from "Chicago Meeting Notes, GFAT – Global Fleet Analysis Tool" Version 1.01, dated September 4, 2000 (see p.3) (Exhibit C); (4) pertinent pages from "Ter Elst meeting notes, GFAT – Global Fleet Analysis Tool" Version 0.1, dated October 8, 2000 (see p.3) (Exhibit D); (5) pertinent pages from "Functional Specifications, GFAT – Global Fleet Analysis Tool", Version 0.1, dated October 9, 2000 (see p.3) (Exhibit E); (6) pertinent pages from "Business Requirements – GFAT – Global Fleet Analysis Tool" Version 1.0, dated November 3, 2000 (see p.3) (Exhibit F); (7) pertinent pages from "The Antwerp Tower Meeting Notes, GFAT – Global Fleet Analysis Tool" Version 1.0, November 23, 2000 (see p.3) (Exhibit G); and (8) pertinent pages from "Report Analysis – Bandag FLEET ANALYSER" Version 0.1, dated December 20, 2000 (Exhibit H).

7.   The Exhibits are consistent with and support my declaration that the invention of every pending claim was conceived prior to October 31, 2000. The Exhibits include meeting notes and functional specifications for implementing an embodiment of the invention, and embodies the limitations of the claimed inventions at least as follows:

Claims 1-3. *See, e.g.,* Exhibit B, pp. 11, 21-27.

Claims 4-6. *See, e.g.,* Exhibit D, p. 11.

Claims 7-8. *See, e.g.,* Exhibit B, pp. 21-27.

Claim 9. *See, e.g.,* Exhibit B, p. 19.

Claim 11. *See, e.g.,* Exhibit B, pp. 21-27.

Claim 12. *See, e.g.,* Exhibit D, p. 14.

Claims 14-15. *See, e.g.,* Exhibit B, pp. 12, 28-30.

Claims 17-30. *See, e.g.,* Exhibit B, pp. 21-30.

Claim 31. *See, e.g.,* Exhibit D, p. 14.

Claims 33-40. *See, e.g.,* Exhibit B, pp. 21-30.

Claim 43. *See, e.g.,* Exhibit D, p. 14.

Claim 44. *See, e.g.,* Exhibit B, pp. 28-30.

8.   Exhibits B-H represent 7 subsequent refinements to the Idea Feasibility Form of July 24, 2000, between August 17, 2000 and December 20, 2000, and these documents continue to contain the support for the invention as outlined above.

9.   From July 24, 2000 to August 17, 2000, I diligently and continuously worked on causing the reduction of invention to practice, making a number of further improvements and revisions as reflected in "Chicago Meeting Notes, GFAT – Global Fleet Analysis Tool" Version 1.0 (Exhibit B).

10.   From August 17, 2000 to September 4, 2003, I diligently and continuously worked on causing the reduction of invention to practice, making a number of further improvements and revisions as reflected in "Chicago Meeting Notes, GFAT – Global Fleet Analysis Tool" Version 1.01 (Exhibit C).

11.   From September 4, 2003 to October 8, 2000, I diligently and continuously worked on causing the reduction of invention to practice, making a number of further improvements and revisions as reflected in "Ter Elst meeting notes, GFAT – Global Fleet Analysis Tool" Version 0.1 (Exhibit D).

12.   From October 8, 2000 to October 9, 2000, I diligently and continuously worked on causing the reduction of invention to practice, making a number of further improvements and revisions as reflected in "Functional Specifications, GFAT – Global Fleet Analysis Tool" Version 0.1 (Exhibit E).

13.   From October 9, 2000 to November 3, 2000, I diligently and continuously worked on causing the reduction of the invention to practice, making a number of further improvements and revisions as reflected in "Business Requirements – GFAT – Global Fleet Analysis Tool" Version 1.0 (Exhibit F).

14.   From November 3, 2000 to November 23, 2000, I diligently and continuously worked on causing the reduction of the invention to practice, making a number of further improvements and revisions as reflected in "The Antwerp Tower Meeting Notes, GFAT – Global Fleet Analysis Tool" (Exhibit G).

15.   From November 23, 2000 to December 20, 2000, I diligently and continuously worked on causing the reduction of the invention to practice, making a number of further improvements and revisions as reflected in "Report Analysis – Bandag FLEET ANALYSER" Version 0.1 (Exhibit H).

16.   It is my understanding that, by no later than January 2001, the law firm of Leydig, Voit & Mayer, Ltd. was contacted for the purpose of preparing a patent application to protect rights in the invention and, thereby, at least constructively reduce the invention to practice.

17.   It is my understanding that a provisional patent application for the invention was filed with the United States Patent and Trademark Office on February 7, 2001 and was assigned application number 60/267,062.

18.   Thus, between July 24, 2000 and no later than February 7, 2001, I and my co-inventors completed sufficient refinements and additions on the subject matter of the inventive system to support new design revisions several times a month on average. This rate of improvement and revision is indicative of continuous and diligent work on the implementation of the invention, i.e., its reduction to practice, and in my experience is actually a higher than normal project progression rate for the industry.

19.   I hereby declare that all statements made herein of my own knowledge are true, that all statements made on information and belief are believed to be true, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date:5-25-2007   /Mark A. Winkler/
                        Mark A. Winkler

Date: 5-25-2007   /Troy D. Fridley /
                        Troy D. Fridley

Date: 5-25-2007   /Dennis R. Hall/
                        Dennis R. Hall

Exhibit A
(3 pages)

IDEA FEASIBILITY FORM

Date	24 July, 2000	Rev. NO.	9

Project Title	Global Fleet Survey/Analysis System/ CIMS Rewrite	PDP NO.	
Sponsor & Title	Tim Chen, Marketing Manager, PSI		

Idea	Design and develop a tool to: • help Bandag and Bandag dealers collect, organize, and report current Fleet tire conditions in a structured and efficient way in order to facilitate analysis, suggest corrective/improved courses of action and provide for unique selling propositions based on facts. • "roll-up" results from Fleet locations globally into summary and comparitive reports, and supply the reports in the primary language of the customer. • Improve the data collection and reporting processes by reducing costs and improving turn around time. • Intergrate the current capabilities of the Fleet tire related systems.

REDACTED

File: GFAT IFF

TARGET MARKET APPLICATIONS			
(Check All Appropriate Boxes)			
Products Sold to Customer or Fleet		Bandag Products Manufactured and Sold to Dealers	
☐ Tread	☐ Equipment		☐ Cement
☐ Repairs	☐ Envelopes		☐ ARC Rings
☐ Cushion	☐ Tools (Repair)		X Other (Specify)
	Software, Hardware and Processes.		

STRATEGIC FIT	
Dealer Profitability	REDACTED
	- demonstrating how Bandag's and Bandag Dealers' PSIP can lower Fleet's operational costs.
	REDACTED
	- providing the Dealers with a competitively differentiated program that helps them get, keep and increase their Fleet business.
Changing Customer Demands	**The system will help Fleets understand and recognise the value of a contractual relationship with the Bandag Strategic Alliance by:** - identifying areas where Bandag and Bandag Dealers can help the Fleet better control its tire-related costs and increase uptime. - benchmarking and measuring improvements in the Fleet's tire-related operating costs (including hidden and process costs), particularly as delivered by the Strategic Alliance. - providing Fleets with fact-based reporting that helps them manage their tire program globally. - allowing the Fleet to concentrate on the core business by outsourcing tyre matters.
Emerging Technologies	Advancements in information and communication technology (hand-held devices, Internet, software developments, computer capacities, etc.) gives us the ability to develop a Fleet data collection and reporting system that will: - reduce process and cycle time vs. our current systems - reduce process costs for all parties vs. our current systems - enable more flexible reporting possibilities - provide real value to Fleet accounts - differentiate Bandag and Bandag Dealer from the competition (leading to increased sales and profitability)
Government Regulations	• None

REDACTED

File: GFAT IFF

Potential Benefits	Increased sales, market share and profitability for Bandag and Bandag Dealers by: • Providing useful and valuable information to Fleet accounts to reduce their tire operating costs. • Improving the responsiveness by providing information immediately upon completion of the data gathering. • Collecting factual information on a Fleet's current and ongoing tire maintenance program, to identify the real needs of the customer and design a Fleet Program to meets those needs. • Providing the Fleet with timely reporting in his/her primary language which will address global language diversity without translation costs and delays. • Showing leadership in the tire industry by applying 'state-of –the-art' technology. • Adding value to the Bandag Franchise by offering a competitively superior system to our Dealer network. • Standardizing tire reporting globally. • Responding to market trends and legal requirements, i.e., green reports and fuel consumption reports, etc. • Gathering and providing easily accessible fleet tire marketing information globally. • Extending the capability to acquire and develop global fleet accounts. • Improving flexibility to provide more personalized information to customers.

REDACTED

Impact of Idea on Other Processes or Products	• Reduced time for data collection and report generation. • Integration of current stand-alone systems. • Information will be consolidated and shared globally. • Roles and responsibilities will be affected. • Reduced or eliminated data entry and handling time. • Will effect global coding structures and systems.

Market Potential of this project	First Year: *See comments on 'Payback Analysis'*
	Second Year:
	Third Year:
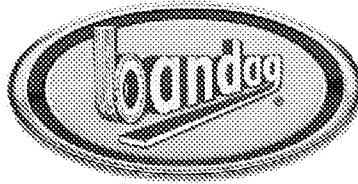
(Form Rev. 8 - 30 Dec 98)

File: GFAT IFF

Exhibit B
(27 pages)

Chicago meeting notes, August 2000

GFAT - Global Fleet Analysis Tool

Application Logo Comes here

Version 1.00

Replaces:	*None*
Last saved date:	17-Aug-2000

	Role	Name	Date	Signature
Author	Document Proposal	Johan Bosschaerts		
Review				
Review				

Revision History		
Document Version	**Date**	**Reason for Update**
0.01	17-August-2000	First draft

<u>Revision List</u>

Author (company if external) – date – version number

Paragraph	Description

Table of Contents

1. Purpose

In this document the conclusions of the Bandag GFAT meeting are summarized. Summary topics are organized in following topics: organizational, functional, technical, and other

Date of meeting: August 7, 2000 until August 11, 2000

Participants to that meeting were:

- ❑ Tim Chen   Project sponsor
- ❑ Mark Winkler   Fleet program manager
- ❑ Dennis Hall   Manager Client/Server Development
- ❑ Troy Fridley   I.T. Product Manager
- ❑ Lauri Ferreira   Overall project manager
- ❑ Kim Minder   TMT administrative assistant
- ❑ Rick Price   TMS, Solutions Specialist (partial attendance)
- ❑ Ronald Smet   Manager Global Information Services
- ❑ Ulrika Areskoug   Fleet program analyst
- ❑ Johan Bosschaerts Real Software, Software Manager

Other resources to this document:

- ❑ The notes made by Ronald Smet during the meeting
- ❑ The document definition / design and development issues that came out of the May 22 to May 26 2000 meeting; Ronald Smet, Troy Fridley and Dennis Hall

1.1 Glossary

Budini   External software proposed as tyre tracking system; rejected mainly because to expensive, no language capacity, no exclusivity, lack of flaxibility

TMS   Tyre management systems – Division of Bandag

NRT   Non Retreadable Tyre

System Bandag   Total solution for dealerships of Bandag

CAMweb   Casing Asset Management – New software

TMT   Tyre Maintenance Tracking – Existing tire performance monitoring for North America

CIMS   Customer information management system – Existing tire performance monitoring tool for Europe

OOSTA   Out of service tyre analysis – Part of Customer information management

2. Project concept

2.1 Project idea

Design and develop a tool to:

❑ Help Bandag and Bandag dealers collect, organize, and report current Fleet tire conditions in a structured and efficient way in order to facilitate analysis, suggest corrective/improved courses of action and provide for unique selling propositions based on facts.

❑ "Roll-up" results from Fleet locations globally into summary and comparative reports, and supply the reports in the primary language of the customer.

❑ Improve the data collection and reporting processes by reducing costs and improving turn around time.

❑ Integrate the current capabilities of the Fleet tire related systems.

REDACTED

REDACTED

2.5 Project objectives

The overall intention of this project is to provide a sales tool towards Bandag and Dealers, this by acting as a professional services organization.

Overall objectives are:

REDACTED

❑   Management of Fleet Tire Program
❑   Audit tire program versus fleet specs
❑   Benchmarking fleet tire program
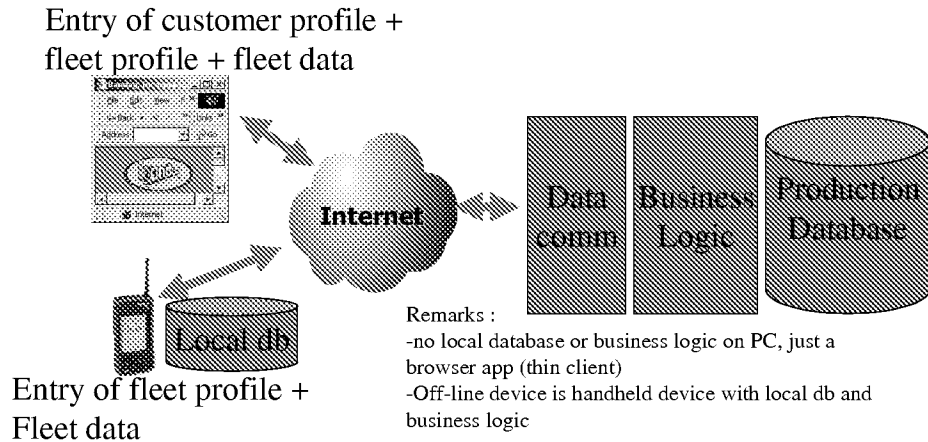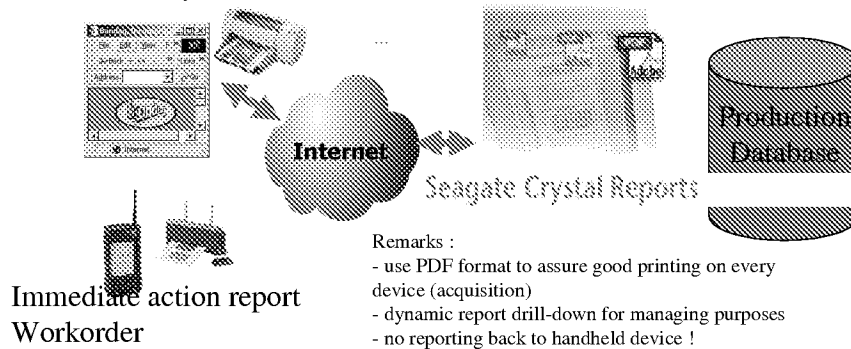
REDACTED

❑   Product evaluation

REDACTED

2.8 Project set-up

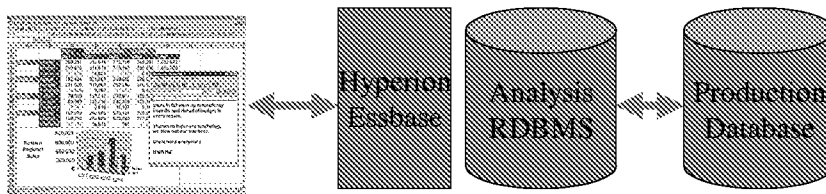# Data captation framework :
established per country / zone

Entry of customer profile +
fleet profile + fleet data

Remarks :
-no local database or business logic on PC, just a
browser app (thin client)
-Off-line device is handheld device with local db and
business logic

Entry of fleet profile +
Fleet data

Data reporting framework :

established per country / zone

Acquisition + Managing reports
Raw data analysis

Remarks :
- use PDF format to assure good printing on every
device (acquisition)
- dynamic report drill-down for managing purposes
- no reporting back to handheld device !

Immediate action report
Workorder

Data analysis framework :
established per country / zone

Analysis, Data warehousing,
Data mining

Remarks :
- concept drawing, both upload to data cube and
OLAP definitions not included in project

4. Technical notes

REDACTED

4.1.4 Production environment

Handheld device specifications:

- ❑   Intermec 6110
- ❑   Windows CE 2.1.2
- ❑   Sybase Ultra light
- ❑   Portable printer (thermo and inkjet)

Server environment:

❑ Microsoft NT Server 4.0
❑ Microsoft Transaction Server 2.0
❑ IIS 4.0
❑ SQL Server 7.0
❑ Internet Explorer 5.0 as browser

4.1.5 Project reporting and management

For efficient project management, reporting and follow-up a GFAT project website will be hosted by Real Software.

The functions of this website are:

❑ Repository for formal documents and versions
❑ Repository for all project documentation
❑ Repository for all project related documentation
❑ Change request system
❑ Electronic discussion forum
❑ Project progress follow-up
❑ Links to application server
❑ Links to other relevant information

Access to this website is restricted to authenticated people (individual user id and password will be assigned and distributed by Real Software). Different roles can be identified:

❑ Administrator – all rights
❑ Project management – has editor access to everything, each version
❑ Development team – has all time access to all version of applications
❑ Evaluation team – has all time access to published versions of applications and documentation

All formal project deliverables will be published to the evaluation team periodically:

❑ Project progress and planning report – Weekly
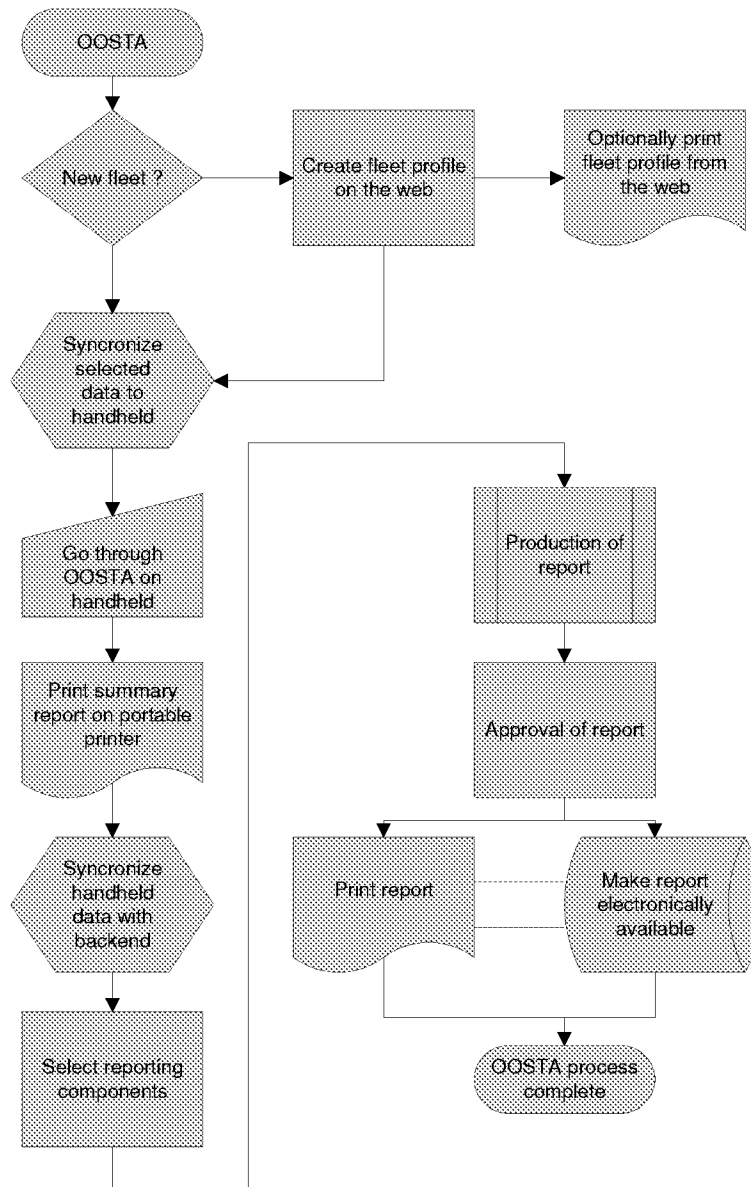❑ Project documentation – when posted for review
❑ Application – when agreed

Project progress reporting and planning report will report on the function and objects that are identified in the development phase.

Change request on functional specifications are to be processed formally as from project start. A procedure and format will be proposed together with publication of the web site.
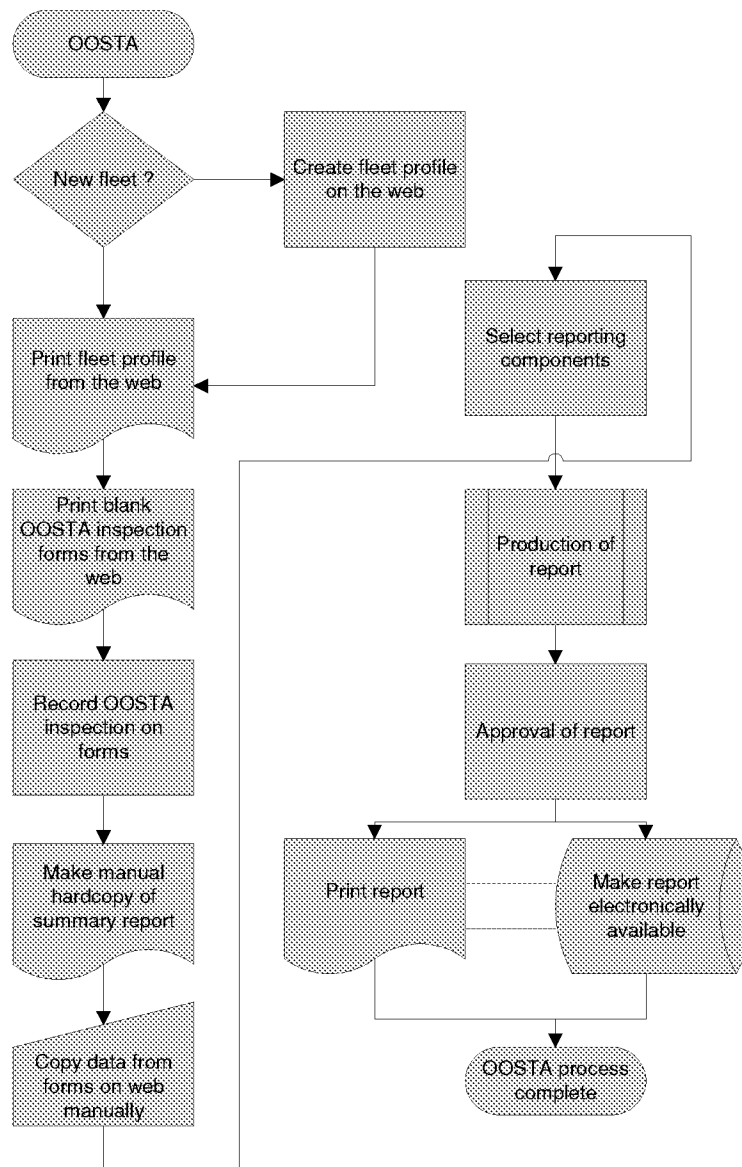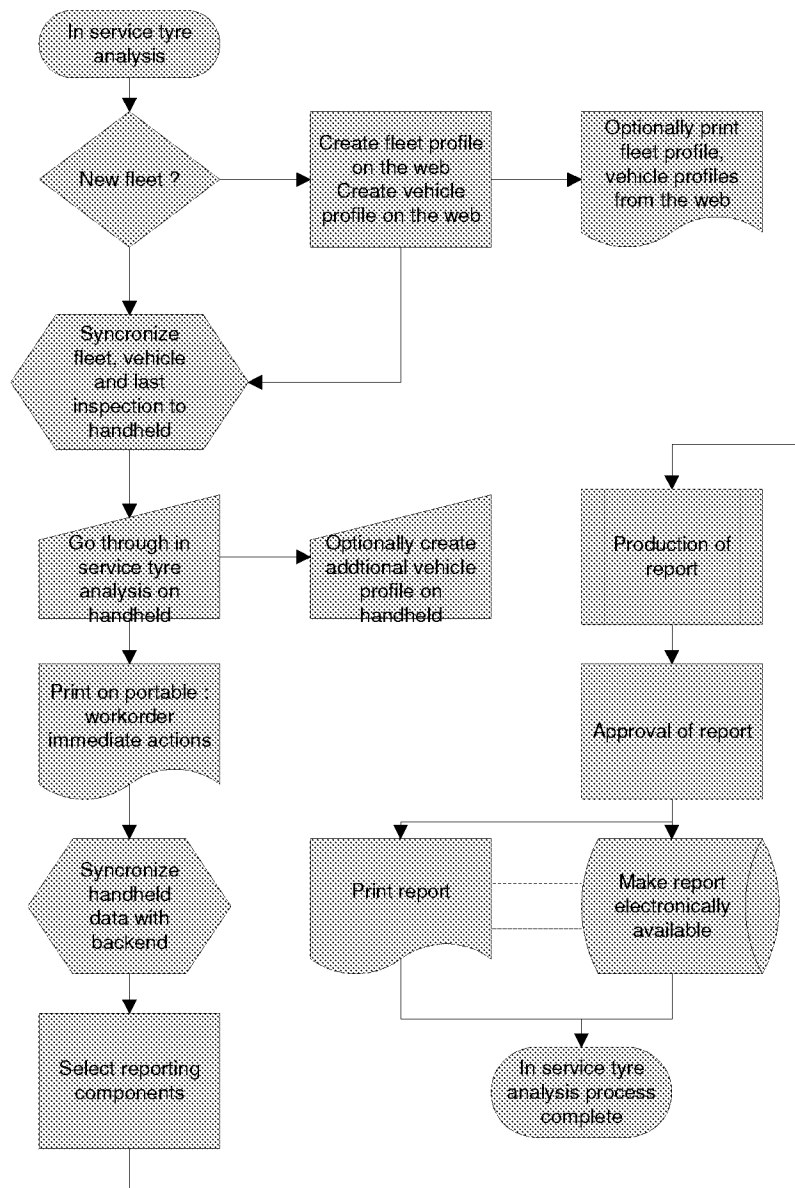
5. Functional notes

5.1 Process diagrams

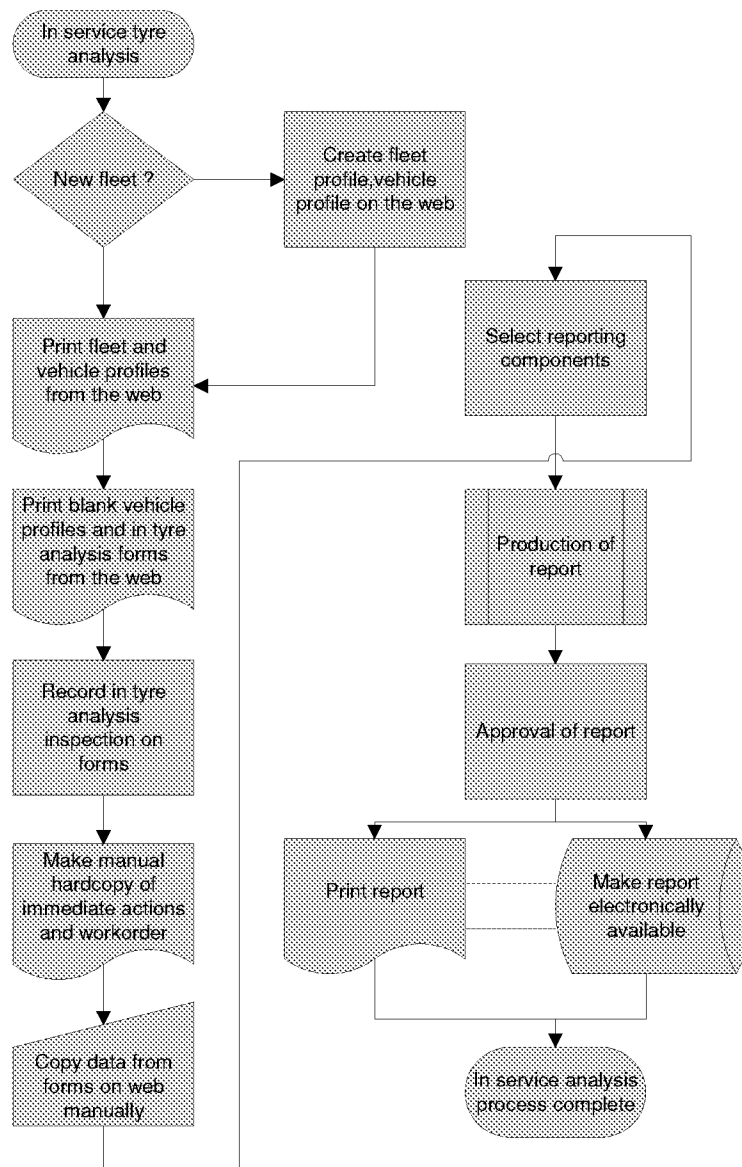### 5.1.1 Out of service tire analysis using handheld

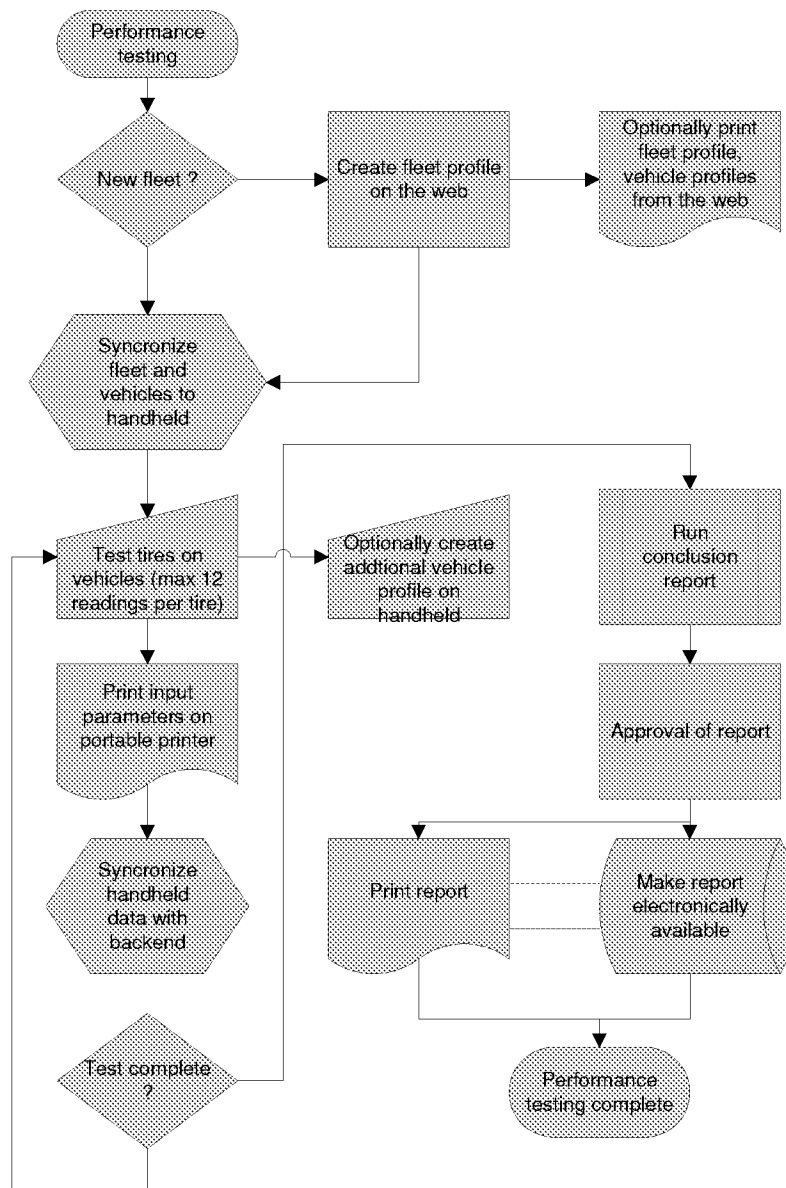## 5.1.2 Out of service tire analysis using hardcopy forms

```
                    ┌─────────────┐
                    │    OOSTA    │
                    └─────────────┘
                           │
                           ▼
                       ◇ New fleet ? ◇ ──────►  ┌──────────────────┐
                           │                     │ Create fleet profile
                           │                     │    on the web    │
                           │                     └──────────────────┘
                           │                              │
                           ▼                              ▼
                    ┌──────────────┐            ┌──────────────────┐
                    │ Print fleet profile ◄─────│  Select reporting
                    │  from the web │            │    components    │
                    └──────────────┘            └──────────────────┘
                           │                              │
                           ▼                              ▼
                    ┌──────────────┐            ┌──────────────────┐
                    │ Print blank  │            │  Production of   │
                    │ OOSTA inspection           │     report       │
                    │ forms from the│            └──────────────────┘
                    │     web      │                     │
                    └──────────────┘                     ▼
                           │                     ┌──────────────────┐
                           ▼                     │ Approval of report│
                    ┌──────────────┐            └──────────────────┘
                    │ Record OOSTA │                     │
                    │ inspection on│            ┌────────┴────────┐
                    │    forms     │            ▼                 ▼
                    └──────────────┘    ┌─────────────┐  ┌────────────────┐
                           │             │ Print report│  │ Make report
                           ▼             └─────────────┘  │ electronically
                    ┌──────────────┐                      │  available    │
                    │ Make manual  │                      └────────────────┘
                    │ hardcopy of  │                             │
                    │ summary report│                            ▼
                    └──────────────┘                     ┌──────────────┐
                           │                             │ OOSTA process│
                           ▼                             │   complete   │
                    ┌──────────────┐                     └──────────────┘
                    │ Copy data from│
                    │ forms on web │
                    │   manually   │
                    └──────────────┘
```

5.1.3 In service tire analysis using handheld

5.1.4 In service tire analysis using hardcopy forms

In service tyre
analysis

New fleet ?

Create fleet
profile, vehicle
profile on the web

Print fleet and
vehicle profiles
from the web

Select reporting
components

Print blank vehicle
profiles and in tyre
analysis forms
from the web

Production of
report

Record in tyre
analysis
inspection on
forms

Approval of report

Make manual
hardcopy of
immediate actions
and workorder

Print report

Make report
electronically
available

Copy data from
forms on web
manually

In service analysis
process complete

5.1.5 Performance testing using handheld computer

```
                    ┌──────────────┐
                    │ Performance  │
                    │   testing    │
                    └──────────────┘
                           │
                           ▼
                      ◇ New fleet ? ◇ ──────▶ ┌────────────────┐      ┌────────────────┐
                                              │ Create fleet   │ ───▶ │ Optionally print│
                                              │ profile        │      │ fleet profile, │
                                              │ on the web     │      │ vehicle profiles│
                                              └────────────────┘      │ from the web   │
                           │                          │               └────────────────┘
                           ▼                          │
                    ┌──────────────┐                  │
                    │ Syncronize   │ ◀────────────────┘
                    │ fleet and    │
                    │ vehicles to  │
                    │ handheld     │
                    └──────────────┘
```

5.1.6 Performance testing using hardcopy forms

5.1.7 Vehicle inspection using a handheld computer

This inspection can be combined with an in service tire inspection or can be performed stand-alone.
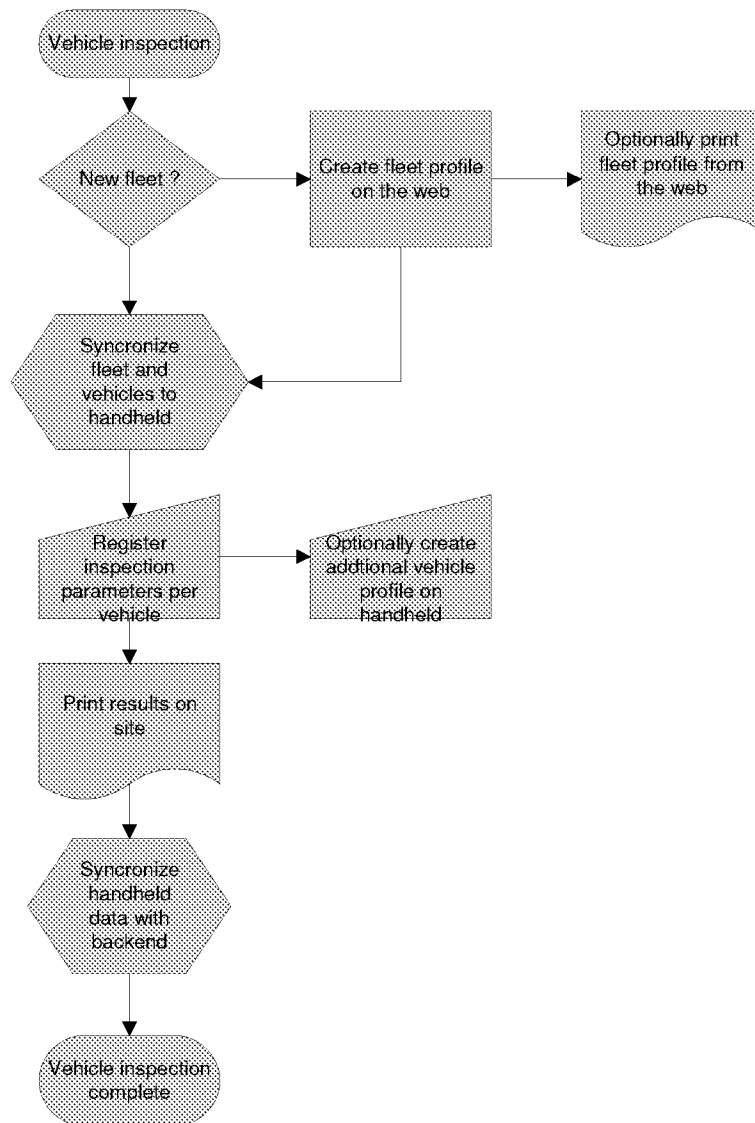
5.1.8 Vehicle inspection using hardcopy forms
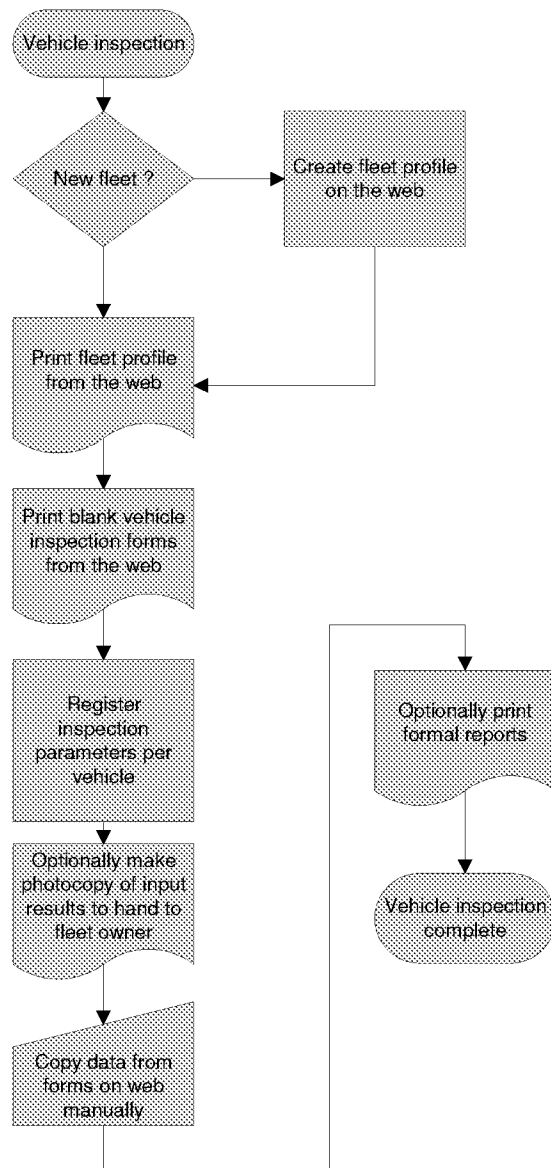
5.2 Reporting concepts

- ❏ Individual survey for a fleet by dealer and/or bandag sales
- ❏ For an individual vehicle (eg. Actions to take sticky note from vehicle inspection)
- ❏ Consolidation of surveys of different fleet locations
- ❏ Comparitive analysis: across time for the same location
  (a location could be the results for different locations added up)

❏ Comparitive analysis: same time for multiple locations
(a time could be a date range for which results are added up to act as one
date)
❏ Comparitive analysis: entire fleet versus industry

Comparative analysis reporting is limited to one report only : comparative matrix
report. All other comparative analysis is done through the data warehouse
analysis tool which only can be used in house.

5.3 Reports

Selections are:

❏ Customer (who and/or for)
❏ Fleet location
❏ Time
❏ Vehicle
❏ Vehicle type

Run report request as:

Select one of (indication between brackets: HH is available from handheld, Web
is available via the Web):
❏ Out of service tire analysis
  ○ Out of service tire analysis report (Web)
  ○ Summary report (Web)
  ○ Casing collection (Web)
  ○ Comparative matrix report (time | location)
❏ In service tyre analysis
  ○ In service tyre analysis report (Web)
  ○ Immediate action (HH + Web)
  ○ Workorder (HH + Web)
  ○ Comparative matrix report (time | location) (Web)
❏ OOSTA + ISTA
  ○ Tire comparison analysis report (Web)
❏ Performance testing
  ○ Mileage tracker (Web)
  ○ Activity report (HH + Web)
❏ Vehicle inspection
  ○ Individual vehicle inspection results (HH + Web)
  ○ Summary report (HH + Web)

Select :
❏ Single location + 1 survey date
❏ Multiple locations + 1 survey date per location
❏ Single location + date range

❑   Multiple locations or fleet witch are consolidated + date range

IMPORTANT : Above extra dimension selections will reflect in the report as a single location survey on one date. So variations of report components that hold those extra dimensions will not be developed. Extra dimensions will only be reflected in the report titles where selections will be copied. Except of the location comparison report in this system, all other multi dimensional reports will be produced from the data warehouse.

As a result reports are generated.

For the reports that consist of components following procedure is set :

❑   Available components for both selections are presented and checked
❑   Optionally uncheck components
❑   Add user notes for available sections
❑   Assemble components into report (pdf format)

Component elements are composed off :
❑   Matrix table
❑   Graph
❑   Text

Report keeping and archiving :
❑   Raw data will be kept in history
❑   Matrixes of generated reports (selected components and user notes) are kept on longer term to allow regeneration
❑   Images of generated reports are kept for limited time for reprint purpose

5.4 Security basics

Basics:

❑   Person who enters data for a specific survey will have access to that complete survey
❑   A single owner with multiple franchise ids can consolidate data (have access to data of other of this dealer franchises)
❑   Fleet with assigned userid + password can view presented reports
❑   All Bandag people can view all data
❑   Raw data can be changed until flagged as approved
❑   Authenticate user has access to one or more modules of GFAT : OOSTA, In service, Performance testing, vehicle inspection

5.5 Cover page basics

- ❏ Logo page for reports per country / language
- ❏ Dealer can add logo and name at designated place
- ❏ Fleet logo or fleet picture can be added in fleet profile; also presented on logo page

5.6 Interfaces

- ❏ Web based profile maintenance should be available
- ❏ IPC provides a function to export fleet profile information
- ❏ Technical this should be an XML file that can be delivered as GFAT input
- ❏ GFAT will import delivered data
- ❏ No export from fleet profile information will be provided in GFAT

Remark: Essbase/Hyperion, TMS, … functions will extract data from the GFAT repository. For this purpose each repository occurrence will be equipped with created on and modified on timestamps but otherwise this will not be considered as a to be developed interface within the GFAT project scope.

5.7 Notes on the handheld

- ❏ No handheld software will be made available to be used on an off-line PC; software will only be available off-line on selected and pre-installed handheld computers and on-line via the web
  (technically it isn't that an issue, but version management will be if software distribution comes up)
- ❏ Updates from handheld software has to be performed via the web (also if database changes are involved; possibly use PC card reader and resources to perform database upgrade)
- ❏ The data downloaded on a handheld is limited by the physical capabilities of a handheld database (memory); after testing, parameter set limitations will be agreed and set
  No OOSTA information will be downloaded
  Only the last in service tire analysis will be downloaded

5.8 Combined surveys

- ❏ Survey identification to allow consolidation of different sources to that survey (could be the start date of the survey)

❑ If different handheld are used, four immediate actions reports will be generated (or synchronize first)
❑ Start date of survey is survey identifier (for exceptional cases a join/consolidate function to join days will be provided)
❑ Generated reports will be provided with a globally unique sequence number to facilitate reference

5.9 Consolidation of fleets scenario's

❑ one dealer with different offices has a fleet with different locations that are serviced by the different franchises of the dealer
the dealership has to be able to run consolidated reports
❑ national accounts have customer number and location id's to be consolidated upon
because Bandag users have access to all data they can run consolidated reports on the national account level
❑ pick and choose locations and a date range to produce a comparative matrix report

Comparative matrix report :

❑ X-dimension = about 10 criteria are possible to be included in the report which can be unchecked
❑ Y-dimension = one location or different locations pick and choose
if only one location is selected the X dimension becomes the different survey dates that are available within the date range

5.10 Administrator functions

❑ all admin functions will be developed in such a way that maintenance can go over the web
❑ assignment of admin people has to be done

5.11 Currency

❑ original currency will be kept in the database
❑ because of calculations have to reflect a status on that moment; the rate on the moment a report is ran will be used

5.12 Codes

Use international standards (e.g. ISO) where applicable

Code list:

- ❑ Code list identifier
- ❑ Language code
- ❑ Code list description

Code cross reference (contains cross reference between local and internal codes):

- ❑ Code list identifier
- ❑ Code internal id
- ❑ Country code
- ❑ Language code
- ❑ Code local id
- ❑ Code is used flag

Code reference:

- ❑ Code list identifier
- ❑ Code internal id
- ❑ Language code
- ❑ Code description
- ❑ Code extended description

Code database access object ensures that via giving country/region code the internal id it will be translated to expected id

Business defines required codes locally and will pass through to the project team that is responsible to enter codes. This global team agrees on how global translation is to be created and how global matching or mismatching is reflected in the system.   Possible unmatched codes will be reported in global an/or consolidated reports (for example: Michelin Code Cap will be reported separately from Recamic Cold Cap).

Failure codes list:

- ❑ Have to be categorized
- ❑ Work for Mark Winkler's group: they have to determine codes

Code maintenance approach:

- ❑ Code maintenance is basically done over the web

❑ All used codes are physically residing within the GFAT project

❑ Possible external master systems on code maintenance will update GFAT codes; interfaces to realize this will reside outside project scope

5.13 Multi-lingual software

5.13.1 Development

To support international languages all code and databases have to support Unicode.

Standard Unicode is a character-encoding scheme that uses 2 bytes for *every* character. The International Standards Organization (ISO) defines a number in the range of 0 to 65,535 ($2^{16} - 1$) for just about every character and symbol in every language (plus some empty spaces for future growth). On all 32-bit versions of Windows, Unicode is used by the Component Object Model (COM), the basis for OLE and ActiveX technologies. Unicode is fully supported by Windows NT. Although both Unicode and DBCS have double-byte characters, the encoding schemes are completely different.

Important remark: if we can assume that software will only be used on Windows 32 bit operating systems, implementing Unicode multi-lingual solutions is rather easy because those OS works natively in Unicode. If also 16-bit support should be included, development and testing will be harder.

Unicode (native) support in Sybase Ultralight and SQL server 7.0 is under investigation.

If we would also have to support the extended characters sets of Kanji for example UCS4 will be the solution. This will impose a lot of extra interfacing and testing on the different platforms. I propose we will go for the Standard Unicode 2 character set development as proposed.

5.13.2 Approach

The application design will originally be executed in US English. Later every piece of 'static' text within the application will replaced by a reference key that is stored with it's context in the database.

This database we will reference as the GFAT glossary. For each language translations have to be entered in the database. The default language to translate from will be the US English development language.

Web application: when a user logs on, the browser can be asked for its

language preference (Tools, Internet options, General, Languages) and this language is used as a default. The user can select a different language.

Handheld device: to limit program size on the handheld, not all available languages will be downloaded, just the one that is selected by the user. If this is also to heavy for the application, a procedure to include translated literals in the executables will be worked out.

A language can be added to the system by adding a language code to the system. When doing that the system will ask which language is to be used as base language for translation. The selected base language will be populated in to each glossary item for the new language.

Exhibit C
(6 pages)
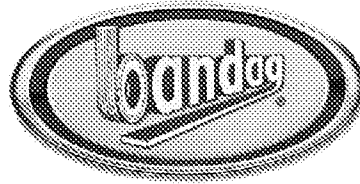
Chicago meeting notes, August 2000

GFAT - Global Fleet Analysis Tool

Application Logo Comes here

Version 1.01

Replaces:	*Draft version 1.00*
Last saved date:	08-Sep-2000

	Role	Name	Date	Signature
Author	Document Proposal	Johan Bosschaerts		
Review				
Review				

Revision History		
Document Version	**Date**	**Reason for Update**
1.00	17-August-2000	First draft
1.01	4-September-2000	Processed remarks of Dennis Hall en Troy Fridley

Revision List

Author (company if external) – date – version number

Paragraph	Description

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REDACTED

Project objectives

Design and develop a tool to:

❏ help Bandag and Bandag dealers collect, organize, and report current Fleet tire conditions in a structured and efficient way in order to facilitate analysis, suggest corrective/improved courses of action and provide for unique selling propositions based on facts.
❏ "roll-up" results from Fleet locations globally into summary and comparitive reports, and supply the reports in the primary language of the customer.
❏ Improve the data collection and reporting processes by reducing costs and improving turn around time.
❏ Intergrate the current capabilities of the Fleet tire related systems.

REDACTED

Exhibit D
(13 pages)
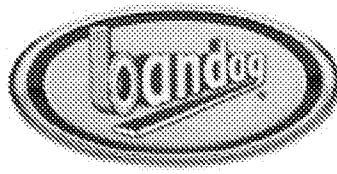
Ter Elst meeting notes, October 2000

GFAT - Global Fleet Analysis Tool

Application Logo Comes here

Version Draft 0.1

Replaces:	
Last saved date:	09-Oct-2000

	Role	Name	Date	Signature
Author	Document Proposal	Yolanda Kerkhofs Real Software	October 8, 2000	
Review				
Review				

Revision History		
Document Version	Date	Reason for Update
0.1	8 October 2000	First draft

Revision List

Author (company if external) – date – version number

Paragraph	Description

Table of Contents

Purpose

In this document the conclusions of the Bandag GFAT meeting are summarized. Summary topics are organized in following topics: organizational, functional, technical, and other

Date of meeting: October 2, 2000 until October 5, 2000

Participants to that meeting were:

- ❑ Dennis Hall   Manager Client/Server Development
- ❑ Troy Fridley   I.T. Product Manager
- ❑ Ronald Smet   Manager Global Information Services
- ❑ Ulrika Areskoug   Fleet program analyst
- ❑ Johan Bosschaerts Real Software, Software Manager
- ❑ Yolanda Kerkhofs   Real Software, Technical Writer – Back-up analyst
- ❑ David De Vloo   Programmer – analyst (3 - 4 October AM)
- ❑ Greet Klinckaert   Software specialist (4 October AM)

Other resources to this document:

- ❑ The notes made by Ronald Smet during the meeting
- ❑ The notes made by Johan Bosschaerts
- ❑ The notes made by Yolanda Kerkhofs
- ❑ The Chicago meeting minutes

Other existing documents that describe business requirements, functionality and project approach are used as knowledge base but are not processed into this Ter Elst notes document. However, they will be used in the user requirements and functional specifications document.

Agenda

<u>Monday:</u>

- Visit Real Software HQ, with presentation of the development team members.
- Update minutes of Chicago meeting, review comments.

<u>Tuesday:</u>

- Review specs of Vehicle Inspection and LCPK, plus amendments to Fleet Inspection and OOSTA.
- Other: Clarify text blocks content;
- Failure codes: condition & cause relationship;
- Speech recognition option.

<u>Wednesday:</u>

- Discuss Primary Design, including the interface approach (i.e.Microsoft standards, graphical GUI, etc.).
- Review proposed development tools and methods.
- Detail development standards, i.e. development documentation standards, coding standards, database naming standards, etc.).
- Review and update project development plan and budget.

<u>Thursday:</u>

- Continue on yesterdays agenda
- Agree upon partnership contract terms.
- Define expectations of "alpha version".

Presentation of the Real Software development team

- ❑ Johan Bosschaerts   Software Manager – Project leader
- ❑ Yolanda Kerkhofs   Technical Writer – Analyst
- ❑ David De Vloo   Developer (Web application)
- ❑ Paul Schuurmans   Developer (Handheld)
- ❑ Greet Klinckaert   Developer (Handheld – Web application)

Update minutes of Chicago meeting, review comments

Interface Approach

Existing applications to use:

1. ISO as priority for keywords
2. System Bandag for tags.
3. CAMWEB as basis for the branding of the web interface.
4. XML standards.

Development Web interface

- ❑ Visual Studio 6.0
- ❑ XML and XSL as interface basic platform; asp as engine; COM for the business logic
- ❑ Word and Excel for reporting components
- ❑ Win Runner, Load Runner, … (Mercury Interactive) for testing purposes

Special requirements:

- ❑ User – friendly.
- ❑ Don't show unnecessary information.
- ❑ Work with a constructive structure.
- ❑ Same look as CAMWEB for the web application, same as SystemBandag for the hand held
- ❑ Use standard icons.
- ❑ Test with a maximum of data.
- ❑ Display a process bar at the bottom of the screen.
- ❑ 800 x 600 is the preferred screen resolution; The web application will support automatic adjustment of the screen resolution
- ❑ Application will be developed for IE 5 and higher
  The parts that can be used by the fleet will provide support for the Netscape 4+ and IE 4+ browsers; all on the win32 platform
  In case IE 5 is not installed the system will display a message with the possibility to install from the web.
- ❑ Possibility to export the report data (eg. to Excel or common csv format)
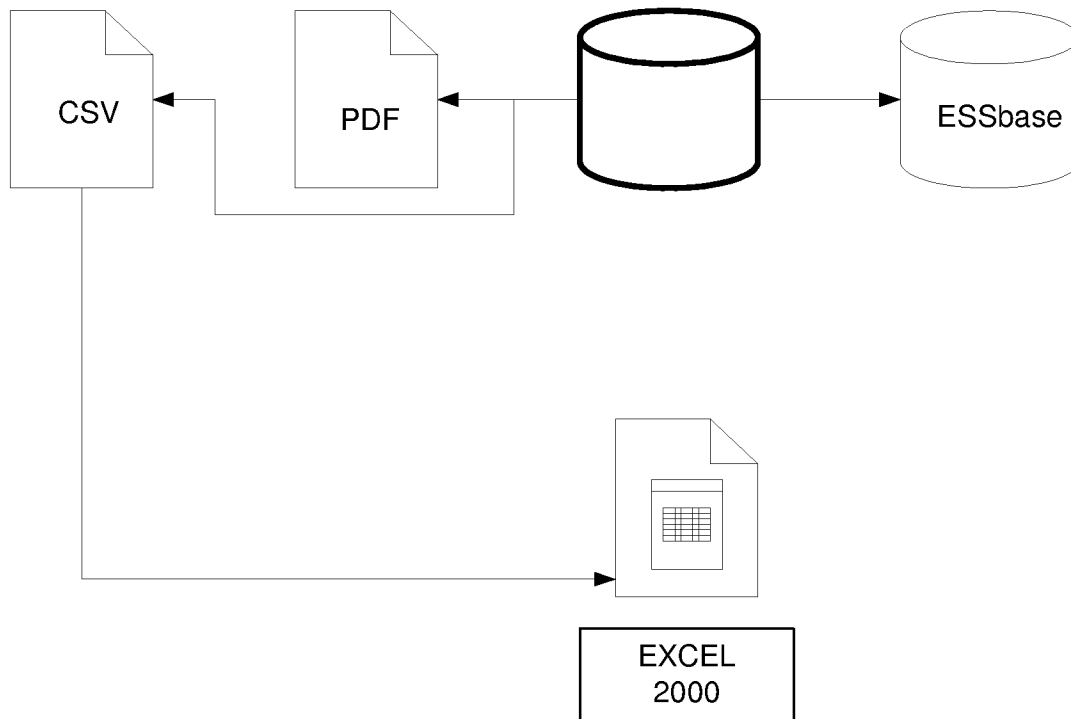
- ❑ Report lay-out (action item).
  - ➤ Large heading only on the first page, small heading on next pages.
  - ➤ Page size depending on the printer properties.
- ❑ ⦙ Report & Screen proposals will be verified & approved within max. 2 iteractions.
- ❑ ⦙ Reports will be implemented as is approved, modification requests & suggested improvements are part of version 2
- ❑ Working with the application will be supported using a communication line of 28.800 bps; higher is although recommendable

Handheld device specifications:

- ❑ Intermec 6110
- ❑ Windows CE 2.1.2
- ❑ Sybase Ultra light
- ❑ Screen size: 320 x 240
- ❑ SystemBandag workorder application compatible; look and feel of GFAT should be similar to SystemBandag user interface
- ❑ Portable printer (thermal and inkjet) (The thermal printer is the O'neil 4" model
  - ➤ small thermal print paper
  - ➤ black and white print for the portable printer

Server environment:

❏ Server model:
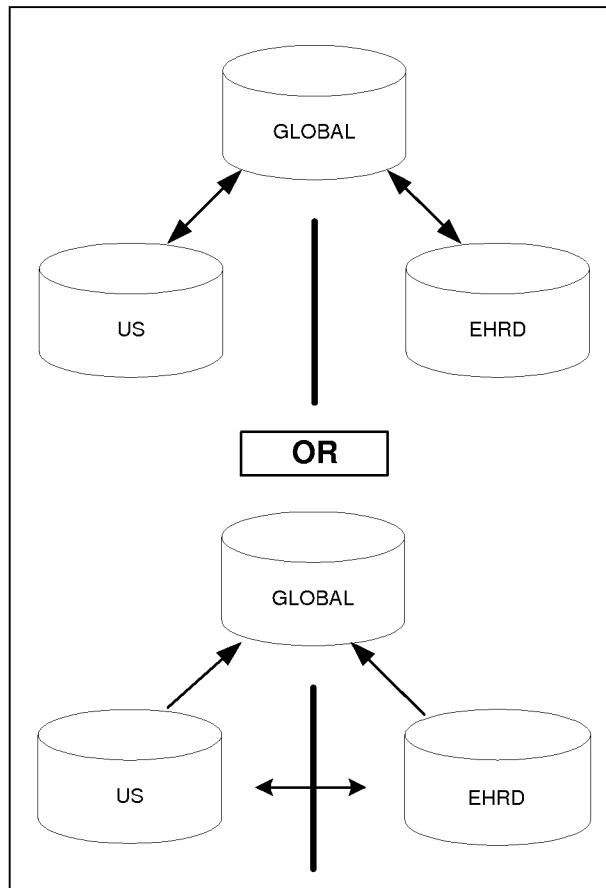
For now we assume that a global single server setup will be chosen. This until we can prove cost wise or implementation wise that a separate setup has advantages to it. In this context the split setup will be selected.

Platform requirements:

❏ Microsoft NT Server 4.0
❏ Microsoft Transaction Server 2.0
❏ IIS 4.0
❏ SQL Server 7.0
❏ **Internet Explorer 5.0 as browser (**for Bandag and dealer options)
    IE4+ or Netscape 4+ for options that will be used by fleet owners.

Way Internet Explorer 5.0 as browser:
(Document created by David De Vloo-Real Software)

Application design CAMWEB

The system follows a three-tier architecture:
- Data layer. SQL Server stored procedures (select, insert, update, delete).
- Business logic layer. COM objects (VB), ASP scripts.
- Presentation layer. HTML, XML/XSL, Java Script.

Data layer

<u>All</u> database related actions make use of parameterised stored procedures.

Business logic layer

Set of COM objects that connect the ASP files with the database. The objects run in MTS and all of them are stateless. All their functionality is provided through methods and each method generates a new transaction. The database connections use a unique user profile, what allows connection pooling and will improve performance.

The systems uses two kinds of ASP files:
- User interface
  - These files generate the data entry and report selection screens
- Actions
  - These files connect with a COM object that processes the request and generates a response both in XML format.

Presentation layer

The ASP files of the previous layer generate HTML and XML that is sent to the client as part of the presentation layer.

The XSL-files define a HTML-Table-structure end assign the fields of the XML-file to the right positions in the table.

HTML-code will then be generated by transforming the XML with the XSL-file and this code will be copied to the ASP-page.

the script files (JavaScript and VBScript) are also included in this category.

Why Internet Explorer 5.0 and higher?

Because it supports XML/XSL.

Some advantages of XML/XSL:
- it cuts down on the amount of data you have to transmit.
  - Xml and Xsl-files can be stored in cache at the client-side.
  - A Xsl-template can be reused for different pages.
- No more page-refreshing when entering or retrieving data from the server, It will behave more like a normal
  application and will be more user-friendly.
- it offloads a lot of the formatting work to the browser that's coasting along on your under-worked Pentium desktop.

- So there is less work for the server, that can then use more of its resources for database-transactions.
- In the future you could allow to send only xml to the user so that they can easily use this data with their own programs, excel- templates,…
- it is easier to develop, and more structerd, also a lot easier to make changes and adjustments.
- Bandag Europe already has experience with these techniques (Camweb)

Some Useful links

MSDN: Why XML?
MSDN: Benifiting from XML
MSDN: XML IE5 Browser support
MSDN: XML-Faq
XML for Managers

Documentation

- ❏ Installation documentation ⎤
- ❏ User documentation ⎬ Microsoft Press like
- ❏ Technical documentation ⎦

Not included in this project (but there should be a link for the future)
CIMMS I
CIMMS II
➡ (Procedures / process / codes explanation)

Speech Recognition Option

The advantage of Speech Recognition in GFAT is, that just one person instead of two can do an inspection. The inspection capacity can be doubled.

Company:

L & H Lernout & Hauspie
Now talking with "Intermec" handheld for specifications

Product name:

ASR – 1600

Integration in the GFAT application:
10 –20 day's development
License price (minimum)

Alternative:

Electronic tools for pressure and tread depth readings.

Questions:

How to personalize?
L&H deployment cost: Hardware
                          License
                          Teaching cost
                          Cost of a pilot project (on laptop)

Define expectations of the "alpha version".

Development Agreements for the GFAT application that should be ready to present at the dealer and fleet conference , first week of February 2000 in ???

Remark: these are minimal requirements; all extra features that can be included are more than welcome

Goal

- ❑ Have the possibility to demonstrate the total flow of one inspection type.
  The choice is made to present the "In Service Tire Analysis" the other inspections will be presented by a Powerpoint presentation.
- ❑ If the Speech recognition option can be integrated in de process at that time it would be a tremendous advantage to motivate the audience at the conference.
- ❑ Work with a fixed scenario.

Requirements

- ❑ Possibility to demonstrate the option to organize an In Service Tire Analysis.
- ❑ Possibility to transmit the prepared data to the handheld computer (this option will be 'faked' by organizing an inspection that already exists on the handheld)
- ❑ Possibility to enter inspection data through the handheld. (manually or speech).
- ❑ Possibility to print local reports (work order, immediate actions).
- ❑ Possibility to view the created inspection reports on the web.

By Early December
- ➢ Final set of show
- ➢ Deliverables defined

Exhibit E
(44 pages)

Functional Specifications

GFAT - Global Fleet Analysis Tool

Version 0.1

Replaces :	*none*
Last saved date :	01/16/01

	Role	Name	Date	Signature
Author	Document Proposal	Yolanda Kerkhofs David De Vloo (Real Software)		
Review	Development Responsibility	Johan Bosschaerts (Real Software)		
Review	Sign for Review			
Approval and Release	Sign for approval of content, control for correctness and completeness			

Revision History		
Document Version	Date	Reason for Update
0.1	October 9, 2000	First draft

Revision List

Name - Date - Version

Paragraph	Description

Table of Contents

1. Purpose and Scope

The Functional Specifications document of the GFAT application contains all the software specifications on a functional and technical level.

The functional specifications are defined to a level of detail sufficient to test whether the application operates properly.

2. Intended Audience

The intended audience for this document is the same as for the other project documents and is specified in the Project Plan of the GFAT application.

3. References

Methodology Related

- Real Software World-wide Computerized System Project Policy

Project Related

- GFAT Project Plan
- GFAT User Requirements Description

System Related

- GFAT User Manual

4. Glossary

Terms that reflect to the Project process and computerized systems in general are defined in the referenced glossary. General terms, which reflect to the present project, are mentioned in the GFAT Project Plan.

Most frequently used terms in the process involving GFAT are mentioned in the GFAT User Requirements Description.

5. System Functions Web

5.1 Access and Security

In General

A user can only open the GFAT application from the web, using Internet Explorer 5 or higher. All users need to enter their User Name and Password when accessing the GFAT application. By checking User Name and Password the system opens in the correct user language and shows only that data where the user has access to.

When Internet Explorer 5 is not installed while accessing the GFAT application, the system displays a warning message.
Only Fleet owners can open the application without browser limitations.

F-Access-01	To access the GFAT application the user opens the application site from the Internet browser.
F-Access-02	An **Enter Password** pop-up window asks for a password that can be confirmed by clicking the OK button or cancelled by clicking the CANCEL button.
F-Access-03	The application opens in the user language known from the entered username and password.
F-Access-04	If IE 5 is not installed a message is displayed with the text: 'Please install Internet Explorer 5'. (A Fleet owners can perform fleet owner actions using any other browser.)

5.2 General Functions
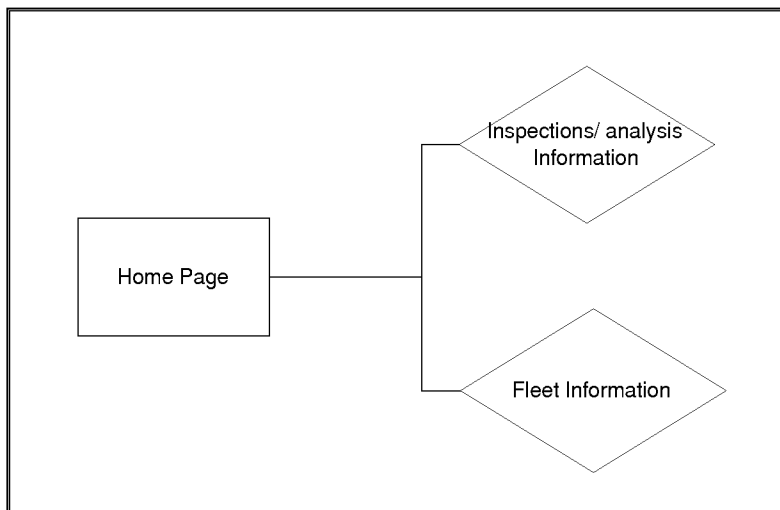
<u>In General</u>

The general window is kind of a home page, this is the first window that the user sees after the log-on window. From here the user can open inspection /analysis information or fleet information. The background of this page can be the application logo. The options are made recognizable by a picture where the user can click on to open that option.

F-General-01   The GFAT application opens on the home page.
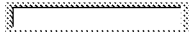
F-General-02   The GFAT home page contains following links:

- Inspections / analysis information

- Fleet information

F-General-03   From the Inspections / analysis link the GFAT application opens first a search window to search for the appropriate group of inspections.

(See Look up Inspection.)

F-General-04   From the Fleet information link the GFAT application opens first a search window to search for the appropriate Fleet data.

(See Fleet Lookup.)

F-General-05   Wherever applicable, a selection can be entered following one of the listed procedures:

- manual entry of the value. Fields are marked by a blank entry field

- manual entry of part of the value

   note: when more than 1 selection matches the partial entry, the first matching value in the list is displayed.

- clicking the ▦ button displays the whole selection list in a separate pop-up window. Select one of the possibilities using the up or down arrow key or by means of a mouse-click. Clicking the OK button (or hitting the Return key) validates the selection; clicking the CANCEL button closes the pop-up and returns to the empty field.

- clicking the ▦ button displays a search window, to search for the correct entry.

- selecting a radio button ◉

- selecting a check box ⌐

- hitting the space bar displays the next value in the selection list.

   Clicking another field or hitting the Tab key validates a selection.

F-General-06   When proceeding through any window using the Tab key and thus reaching a field containing check boxes, the first check box can also be validated by hitting the Return key or the space bar. All other check boxes can only be validated by a mouse click.

F-General-07   Check boxes can be checked by a simple mouse click or hitting the space bar.

F-General-08   The description of mandatory fields are displayed in a bold font

F-General-09   Double-click in an overview list opens the information window of the
                selected item.

F-General-10   The buttons directly associated with the grid are inoperable when the grid
                selection is invalid.

5.3 Fleet Registration
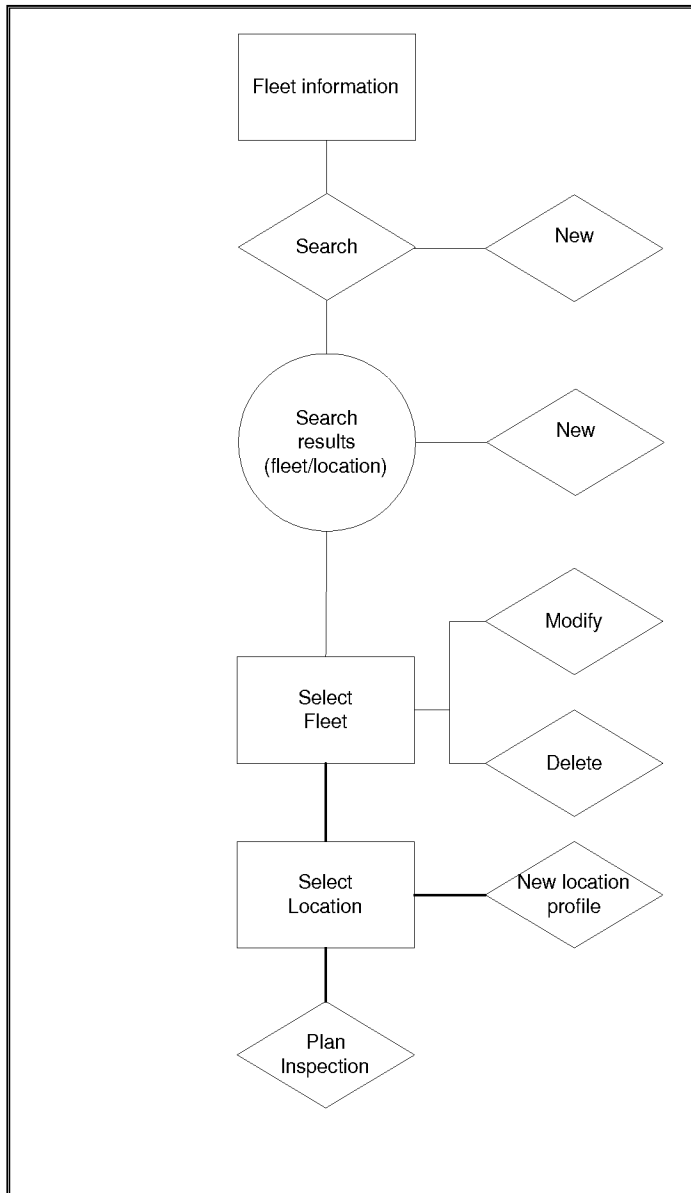
<u>In General</u>

Starting from the home page by clicking on the fleet information picture, the user needs to
perform a search action to receive a conveniently arranged list of fleet data. From this
window the user can also decide to create a new fleet or select an existing fleet and create a
new location profile.

5.3.1 Fleet Lookup

F-Fleet-01   The search window contains only those fleets where the user has access to.

F-Fleet-02   The search form contains the following buttons:

- Find:
  Fill in the list with the found fleets

- Clear:
  Clears the specified criteria

- New fleet:
  Go to the Fleet screen to create a new Fleet

- Open Fleet:
  Go to the Fleet maintenance screen and show the selected Fleet

- Import fleet:
  Go to the Import Fleet screen.

- Delete Fleet:
  Deletes the selected Fleet after confirmation (Delete yes/no)

- Show vehicle types:
  Go to Fleet Vehicle Type screen to view and create fleet vehicle types for the selected fleet.

- Show Tire Types:
  Go to Fleet Tire Types screen to view and create fleet tire types for the selected fleet.

F-Fleet-03   The search fleet displays the following criteria-fields:

Field	Response field specification	Mandatory	Special specifications
Fleet name	Field	N	
Fleet type	field + ▦	N	
City	field	N	
Country	field + ▦	N	
Market segment	field + ▦	N	

F-Fleet-04   The search returns a list of fleets from which a selection can be made.

F-Fleet-05   The list contains name, city, country and market segment.

F-Fleet-06   If a user clicks on the header, the information is sorted ascending/descending in the list.

F-Fleet-07   Max records returned 100 in 4 pages of 25
              More then 100 records return error

5.3.2 Fleet Information

F-Fleet-08   This screen will be used for creating new and updating existing fleets.

F-Fleet-09   Page is accessible from: <u>Fleet Lookup</u>

<u>Look up</u> Inspection

F-Fleet-10   The **Fleet Maintenance** window is subdivided into a part that registers general information, and a section where fleet details as Market segment, fleet and documentation language and the fleet- logo/picture can be entered.

All locations of the fleet are listed in a collapsible section at the bottom of the screen.

The access security is stored on a separated screen that can be opened with the button "Security".

F-Fleet-11   The fleet window displays in edit mode only if the user has edit rights.

All fields are editable except Fleet id, external id, creation- and modification data.

F-Fleet-12   The **Fleet maintenance window** contains the following buttons:

- New Fleet:
  Saves the current fleet information
  Clears all the fields
  Automatically fills in the fields Created by, Registration date,

- Save Fleet:
  Saves the current information
  Automatically retrieves a new id from the server.

- Delete Fleet
  Deletes the selected Fleet after confirmation (Delete yes/no)

- Security:
  Opens the security maintenance window, this is only accessible for Bandag members.

- New Location: (at the bottom of the location list)
  Go to the <u>Location</u> screen to create a new Location

- Open Location: (at the bottom of the location list)
  Go to the <u>Location</u> screen and show the selected Location.

- Delete Location: (at the bottom of the location list)
  Deletes the selected Location after confirmation (Delete yes/no)

- Show vehicle types:
  Go to <u>Fleet Vehicle Type</u> screen to view and create fleet vehicle types.

- Show Tire Types:
  Go to <u>Fleet Tire Types</u> screen to view and create fleet tire types.

F-Fleet-13   The **General information** of the fleet maintenance window contains following fields:

Field	Field type	Mandatory	Special specifications
Fleet name	field	Y	

Fleet id	field	Y	read only
Fleet type	Field + ▦	N	
City	field	Y	
Zip Code	field	Y	
State / Province	field	Y	
Country	field + ▦	Y	
Links up to fleet	field	N	*Field + search button to select the linked fleet.*
Type of link	Option buttons	Subsidiary/ Bought by	*(mandatory when links up is selected)*
External id	field	N	read only

F-Fleet-14   A value for the 'Fleet id' and 'External id' fields is automatically generated. If the value of 'External id' includes multiple references to other systems, separate them by a semi-colon.

F-Fleet-15   In the '**Fleet details**' part of the New fleet window the user can enter following fields taking into account their respective specifications:

F-Fleet-16

Field	*Response field specification*	*Mandatory*	*Special specifications*
Market segment	field + ▦	Y	
Fleet Language	field + ▦	Y	
Document Language	field + ▦	Y	
Insert Fleet logo	Button + Picture placeholder	N	
Insert Fleet Picture	Button + Picture placeholder	N	

F-Fleet-17   The **'Fleet Security window'** contains a table with the access rights. The table contains the following columns:

- User name:

- User type: Bandag, Dealer or Fleet

- Access rights: Read, Modify, Manager

When a Bandag person creates a fleet occurrence, that person can assign one or more Bandag people and dealers to the fleet to have update access to the fleet. A dealer is assigned to a Bandag sales person in its profile. That Bandag sales person automatically gains access to the fleet occurrence created by the dealer (mail message alert to that sales person). It's up to that sales person to give other Bandag or dealer persons access if necessary.

All fleets occurrences are available for read to the entire authenticated Bandag network, only to assigned dealers and to the fleet itself if allowed.

The security window contains the following buttons:

- Add Bandag user

- Add Dealer user

F-Fleet-18   From the fleet window the user can click on the new location button to enter a new location profile.

F-Fleet-19   Delete a fleet can only be done when this fleet has no attached documents, like locations or inspections. The fleet will be actually removed from the database, no history will be staved.

5.3.3 Import a Fleet

F-Fleet-20   To be continued

F-Fleet-21   Opens the GCMS application to select and import an existing fleet into GFAT.

5.3.4 Fleet Vehicle Type Information

F-Vehicle-01   This screen will be used for creating new and updating existing Fleet vehicle types.

F-Vehicle-02   Page is accessible from:
> Fleet Lookup
> Fleet Information
> In service tire analysis readings
> Vehicle inspection readings
> Performance testing readings

F-Vehicle-03   The **Fleet Vehicle types Information** window is subdivided into a part that registers **General Information**, and a section where **Axle Details** as Axle pressure and axle pull can be entered.

All **existing Fleet vehicle types** are listed in a collapsible section at the top of the screen.

In an **Axle Configuration Matrix** the user can select the tires per axle.

F-Vehicle-04   The **Fleet Vehicle types maintenance** window contains the following buttons:

- New Fleet vehicle type:
  Saves the current fleet information
  Clears all the fields
  Automatically fills in the fields Created by, Registration date,

- Save Fleet Vehicle type:
  Saves the current information
  Automatically retrieves a new id from the server.

- Delete Vehicle type
  Deletes the selected Fleet Vehicle type after confirmation (Delete yes/no)

- Open Vehicle type
  Displays the vehicle type information of the selected vehicle type.

F-Vehicle-05   The **General section** of the Fleet Vehicle Type screen contains the following fields:

Field	Response field specification	Mandatory	Special specifications
Vehicle denomination	field	Y	
Vehicle type code	field + ▨	Y	
Configuration code	field	Y	
Application code	field + ▨	Y	

Configuration identifier	field + ▦	Y	*Fills the Axle Configuration Matrix with the most possible tire combination.*
Valid from	field	Y	*Default creation date*
Valid until	field	N	*Default empty, only filled when deactivated*
Number in fleet	field	Y	
Tires per vehicle	field	Y	

F-Vehicle-06   The **Axle Configuration Matrix** description:

By selecting a configuration identifier the matrix displays the most relevant configuration.

To up-date the matrix:

- First select the axle type in the picture or combo before it is possible to select tires.

- Axle types   gray = deselected
                         red = steering
                         yellow = free rolling
                         bleu = lift

- It is only possible to select the next axle when the previous is specified.

- Only the last axle in the row can be deselected when no tires are selected.

- The user only can select tires when the correspondent axle is specified.

- When the user clicks on tire x.1 also tire x.4 is selected. (x = axle)

- When the user clicks on tire x.2 also tire x.3 is selected (if x1 and x.4 already are selected)

- When the user clicks on tire x.2 all tires of that axle will be selected (only when no tires were selected).

- When deselecting tire x.2 also x.3 will be deselected.

- When deselecting tire x.1 all tires will be deselected.

- Deselecting the axle also all tires will be deselected.

- Selecting 1 spare tire will select this tire and all prior spear tires.

- Selecting a spare tire in an all ready selected list saves the new selection.

F-Vehicle-07   **Axle information**:

Displays only those axle types that are selected in the axle configuration matrix.
Next to every axle type the user can enter the pressure and the pull point.
The unit of measurement can be selected from a combo-box. The default unit is the one of the current user.

5.3.5 Fleet Tire Types Information

F-Tire-01   This window will be displayed when not all tire information is known to create the inspection reports.

F-Tire-02   The general section of the Fleet Tire Type Information screen contains the following fields:

Field	Response field specification	Mandatory	Special specifications
Fleet name	field	Y	default filled from inspection window.
Location name	field	Y	default filled from inspection window.
Manufacturing Code	field + ▨	Y	
Design / Series	field + ▨	Y	
Tire size	field + ▨	Y	
Tire category	field + ▨	Y	
Bias / Radial	Radio button	N	
Tread depth	field	Y	
Price new	field	Y	
Price Retread	field	Y	
Price Casing	field	Y	
Disposal cost	field	Y	

F-Tire-03	The tire information on the tire type window is default filled with the information entered for the inspection
F-Tire-04	If for the same location this kind of tire type already exists the prices of new, retread and casing will be inherited from that tire type form.
F-Tire-05	If the tire size already exists for a different location for this fleet the prices of new, retread and casing will be inherited from this location
F-Tire-06	At the bottom of the tire type screen an overview list is displayed with all tire type forms that need to be completed.
F-Tire-07	The button "Next tire type" opens the next tire type form to complete the missing information.

5.4 Location Registration

5.4.1 Look up Location

F-Locat-01	The Location search screen is subdivided into a part that displays the search criteria and a section that includes the search results.
F-Locat-02	The **Look up Location** window contains the following fields

Field	Response field specification	Mandatory	Special specifications
Location name	field	N	
City	field	N	
Country	field + ▦	N	
Market segment	field + ▦	N	

F-Locat-03	The list with search results, maximum returns 100 records in 4 pages of 25 items. More then 100 records return a message to specify the search.
F-Locat-04	The **Search window** contains the following buttons:

- Find:
  Fills in the list with the found fleets.

- Clear:
  Clears the specified criteria

- New Location
  Go to the Location maintenance screen to create a new location.

- Open Location:
  Go to the Location maintenance screen and show the selected Location

- Delete Location
  Deletes the selected Location after confirmation (Delete yes/no)

F-Locat-05	From the Location search results the user can open the location form.

5.4.2 Location Information

F-Locat-06 Create a new location by clicking on the button **New Location,**
clicking on the button ░ in the field 'Fleet name' and select an existing fleet
to link a new location to.

F-Locat-07 The **Location Information** screen displays the following fields:

Field	Response field specification	Mandatory	Special specifications
Fleet id	field	Y	*Automatically filled*
Fleet name	field + ░	Y	*Automatically filled or searched for.*
Location name	field	Y	
Location id	field	Y	
Valid from	field	Y	*Default creation date*
City	field	N	
Zip Code	field	N	
State / Province	field	N	
Country	field + ░	Y	
Market segment	field + ░	Y	
Location language	field + ░	Y	
Document language	field + ░	Y	
Currency code	field + ░	Y	
Mileage unit code	field + ░	Y	
Pressure unit code	field + ░	Y	
Weight unit code	field + ░	Y	
Vehicles identified by	field + ░	Y	
Status	field + ░	Y	

F-Locat-08 Deleting a location can only be done when no linked document exist for this
location. A deleted location will be deleted from the database, no history
will be saved.

F-Locat-09   The Location form displays in edit mode only if the user has edit rights.

               All field are editable except Location id, external id, creation and
               modification data.

F-Locat-10   When a location is changed the previous version is saved in a history file.

F-Locat-11   The section Location history on the Location Information window is
               collapsed and only visible for Bandag users.

               This section displays the history of the selected location.
               the information is sorted in the following columns:

               Fleet, Location, date valid from, date valid until.

5.4.3 Vehicle information

F-Vehicle-01   This window is accessible from:

               Location information

               Look up Location

F-Vehicle-02   The Location Vehicle type screen is subdivided into a part that displays a
               collapsible list of all existing vehicle types (for this fleet) and a section
               where the user can enter the information of a new vehicle type. By selecting
               a vehicle type out of the list that vehicle information will be displayed in the
               information section of this screen.

F-Vehicle-03   The vehicle information section displays the following fields.

Field	Response field specification	Mandatory	Special specifications
Fleet id	field	Y	Automatically filled
Fleet name	Field + ▓	Y	
Location id	Field	Y	Automatically filled
Location name	Field + ▓	Y	
Vehicle id	field	Y	Automatically filled
Date out of service	Field	N	
Fleet vehicle type	field + ▓	Y	
Vehicle brand	field + ▓	N	
Model	field + ▓	N	
Mileage unit code	field + ▓	Y	

Year of build	Field	N	

F-Vehicle-04   The user can search for a fleet and select the location when creating a new
location vehicle.

5.5 Dealer Registration

F-dealer-01 In the menu are the following options selectable:

Main option: Dealers

Sub-options: Look for dealer HQ

New dealer HQ

Look for dealer Locations / Franchises

New dealer Locations / Franchises

5.5.1 Lookup Dealer HQ

F-dealer-02 The search window contains only those dealers where the user has access to.

F-dealer-03 The search form contains the following buttons:

- Find:
  Fill in the list with the found dealers.

- Clear:
  Clears the specified criteria.

- New dealer:
  Go to the Dealer HQ screen to create a new Dealer.

- Open Dealer:
  Go to the Dealer HQ screen and show the selected Dealer

- Import Dealer:
  Go to the Import Dealer screen.

- Delete Dealer:
  Deletes the selected Dealer after confirmation (Delete yes/no)

- Show Dealer locations/ Franchises:
  Go to Dealer HQ screen to view and create Dealer locations/Franchises.

F-Fleet-04 The search dealer displays the following criteria-fields:

Field	Response field specification	Mandatory	Special specifications
Dealer name	field	N	
Dealer id	field	N	
City	field	N	
Country	field + ▦		

F-Fleet-05 The search returns a list of dealers from which a selection can be made.

F-Fleet-06 The list contains name, city and country.

F-Fleet-07 If a user clicks on the header, the information is sorted ascending/descending in the list.

F-Fleet-08   Max 100 records are returned in 4 pages of 25 records
              More then 100 records return a error message.

F-Fleet-09   Selecting and opening a dealer from the list opens the Dealer maintenance
              window.

5.5.2 Look up Dealer Locations / Franchises

F-dealer-10   The search window contains only those dealers where the user has access to.

F-dealer-11   The search form contains the following buttons:

- Find:
  Fill in the list with the found dealer Locations / Franchises.

- Clear:
  Clears the specified criteria.

- New dealer Location / Franchise:
  Go to the Dealer Locations / Franchises screen to create a new Dealer
  location / Franchises.

- Open Dealer Location / Franchise :
  Go to the Dealer Locations / Franchises screen and show the selected
  Dealer Location / Franchise.

- Delete Dealer Location / Franchise:
  Deletes the selected Dealer after confirmation (Delete yes/no)

F-Fleet-12   The search dealer location / Franchise displays the following criteria-fields:

Field	Response field specification	Mandatory	Special specifications
Dealer name	field	N	
Dealer id	field	N	
Location / Franchise	field + ▦	N	
City	field	N	
Country	field + ▦	N	

F-Fleet-13   The search returns a list of dealers Locations / Franchises from which a
              selection can be made.

F-Fleet-14   The list contains Dealer HQ, Location / Franchise, city and country.

F-Fleet-15   If a user clicks on the header, the information is sorted
              ascending/descending in the list.

F-Fleet-16   Max 100 records are returned in 4 pages of 25 records
              More then 100 records return a error message.

5.5.3 Dealer HQ Information

F-dealer-17 Page is accessible from:
  Fleet Lookup
  Fleet information

F-dealer-18 The **Dealer HQ Information** window is subdivided into a part that registers **General Information**, and a section where all dealer locations of this dealer are displayed in a collapsible list.

  At the bottom of the screen the external section will be displayed this is only visible for the Bandag users.

F-dealer-19 The **Dealer HQ Information** window contains the following buttons:

- New Dealer HQ
  Saves the current dealer information
  Clears all the fields
  Automatically fills in the fields Created by, Registration date,

- Save Dealer HQ:
  Saves the current information
  Automatically retrieves a new id from the server.

- Delete Dealer HQ
  Deletes the selected Dealer HQ after confirmation (Delete yes/no)

- Import Dealer:
  Opens the import window.

- New Dealer Locations/Franchises:
  Opens the dealer Location / Franchises maintenance window

- Open Dealer Locations / Franchises:
  Displays the Dealer Locations / Franchises information of the selected Dealer Location / Franchises.

F-dealer-20 The general section of the Dealer screen contains the following fields:

Field	Response field specification	Mandatory	Special specifications
Dealer id	field	Y	
Dealer name	field	N	
City	field	N	
Zip code	field	N	
State / Province	field	N	
Country	field + ▨	N	

F-dealer-21   The Dealer Location/ Franchise list is build with the following columns:

- Location/ Franchise name

- City

- Country

- Contact person

F-dealer-22   The external section of the Dealer screen contains the following fields:
These are only visible for Bandag users with editor access, but they can not
modify the information.

Field	Response field specification	Mandatory	Special specifications
Dealer id	field	Y	If imported.
External system identifier	field	Y	If imported.
External key reference	field	Y	If imported.

5.5.4 Dealer Locations / Franchises Information

F-dealer-23   Page is accessible from:
  Dealer HQ

  Look up Dealer Locations / Franchises

F-dealer-24   The **Dealer Location / Franchise** window contains the following
buttons:

- New Dealer Location / Franchise
Saves the current dealer information
Clears all the fields
Automatically fills in the fields Created by, Registration date,

- Save Dealer Location / Franchise:
Saves the current information
Automatically retrieves a new id from the server.

- Delete Dealer Location / Franchise
Deletes the selected Dealer HQ after confirmation (Delete yes/no)

- Import Dealer: ?????
Opens the import window.

F-dealer-25   The **General information** section of the Dealer screen contains the
following fields:

Field	Response field specification	Mandatory	Special specifications
Dealer id	field	Y	
Dealer name	field	N	

City	field	N	
Zip code	field	N	
State / Province	field	N	
Country	field + ▓	N	

F-dealer-26   The **External section** of the Dealer screen contains the following fields: These are only visible for Bandag users with editor access, but they can not modify the information.

Field	Response field specification	Mandatory	Special specifications
Dealer id	field	Y	*If imported.*
External system identifier	field	Y	*If imported.*
External key reference	field	Y	*If imported.*

5.6 Inspection Registration
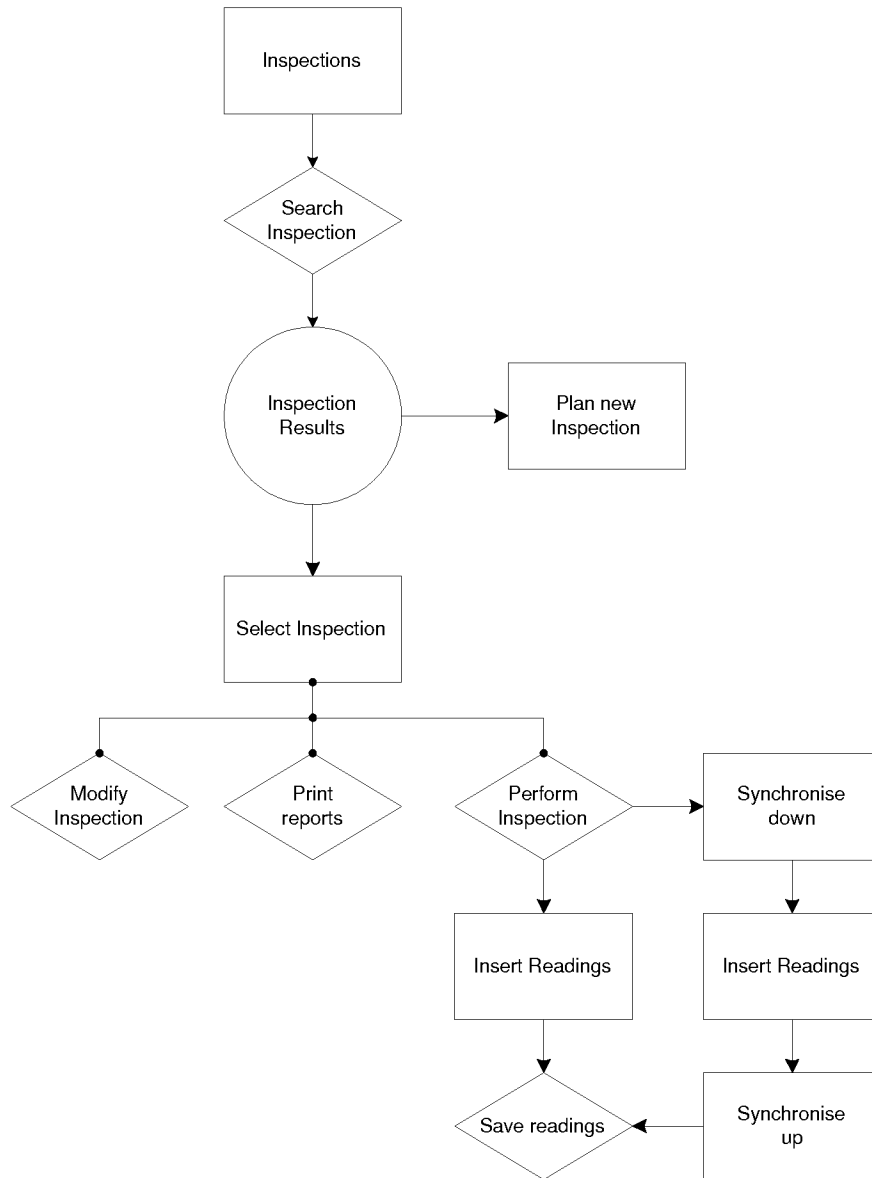
5.6.1 Look up Inspection

F-Inspect-01   The search window contains only those inspections where the user has access to.

F-Inspect-02   This window is accessible from:

        Home page

        Location

        Look up Location

F-inspect-03   The search form contains the following buttons:

- Find:
  Fill in the list with the found inspections

- Clear:
  Clears the specified criteria.

- New Inspection:
  Go to the <u>Inspection preparation</u> screen to create a new inspection.

- Open inspection / analysis:
  Go to the inspection maintenance screen and show the selected inspection.

- Delete inspection / analysis:
  Deletes the selected inspection / analysis after confirmation (Delete yes/no)

- Show reports:
  Go to <u>Look for</u> Report screen to view and create inspection reports.

F-inspect-04   The search inspection analysis screen displays the following criteria-fields:

Field	Response field specification	Mandatory	Special specifications
Inspection id	field	N	
Inspection type	field + ▦	N	
Fleet	field + ▨	N	
Location	field + ▨	N	
Status	field + ▦	N	
Date from	field	N	
Date to	field	N	

F-inspect-05   The search returns a list of inspections from which a selection can be made.

F-inspect-06   The list contains location, start date and status.

F-inspect-07   If a user clicks on the header, the information is sorted ascending/descending in the list.

F-inspect-08   Max records returned 100 in 4 pages of 25
More then 100 records return error

5.6.2 Inspection Preparation

F-inspect-09   There is only one inspection Preparation screen for all types of inspections.
Depending on the type of inspection that the users selects, the screen will change:

- When selecting the type Vehicle inspection the preparation screen will display a link to the window "Select Attributes".

- When selecting the type Performance testing the preparation screen doesn't display the time fields for the "from and until" indications.

F-inspect-10   Page is accessible from:

- Look up Inspection

- Search fleet

- Look up Location

- Location

F-inspect-11   The **Inspection Preparation** window contains the following buttons:

- Search inspection:
  Opens the search window.

- New inspection
  Saves the current inspection information
  Clears all the fields
  Automatically fills in the fields Created by, Registration date,

- Save inspection:
  Saves the current information
  Automatically retrieves a new id from the server.

- Open inspection readings:
  opens the inspection readings if the already exist, if no readings are
  entered for this preparation a message will be displayed.

- New Fleet:
  Opens the Fleet window to create a new fleet

- New Location:
  Opens the Location window to create a new location

- Start inspection / analysis:
  - Opens the list of inspected vehicles for the in service tire inspection.
  - Opens the list of inspected tires for the out of service tire analysis
  - Opens the list of inspected vehicles for the Vehicle inspection
  - Opens the list of inspected vehicles for the Performance testing

- Print Blank form.
  Prints blank Inspection forms, depending on the selected inspection
  type.

- Generate Report
  Opens the screen to select the report components and enter the custom
  texts parts. When no items are inspected the system displays a
  warning massage to insert the readings.

  When there are tire types entered during the inspection for which
  there are no prices specified for this location, a warning will be shown
  that will direct the user to the fleet tire types - screen where the prices
  for these tire types have to be entered before generating the report
  If this is skipped then the generated report will not be correct.

- Inspection Security:
  Opens the inspection security window to specify the users that can
  access the inspection information.

- Report Security:
  Opens the Report security window to specify the users that can access
  the inspection reports.

F-inspect-12   The Inspection Preparation screen is subdivided into a part that displays
                the General information and a section that includes the Report
                information.

F-inspect-13   The **General information** section of the inspection Preparation screen
                contains the following fields:

Field	Response field specification	Mandatory	Special specifications
Inspection type	field + ▨	Y	
Inspection id	field	Y	Computed sequential number
Fleet	field + ▨	Y	
Location	field + ▨	Y	
Dealer	field + ▨	N	Default dealer from the selected location.
Dealer Location	field	N	Default location from the selected dealer.
Inspection planned on	field	Y	Automatically filled: creation date
Inspection from	field	Y	Time + date
Inspection to	field	Y	Time + date
Initiated by	field + ▨	Y	
Performed by	field + ▨	Y	
Participant 1 - 6	field	N	

F-inspect-14   The **Report information** section of the inspection screen contains the following fields:

Field	Response field specification	Mandatory	Special specifications
Date immediate action	field	N	Automatically filled. Time + date only for ISTA
Mode immediate action	field + ▨	N	Automatically filled. Handheld or Web only for ISTA
Date Work order	field	N	Automatically filled. Time + date only for ISTA
Mode work order	field + ▨	N	Automatically filled. Handheld or Web only for ISTA

Date summary report	field		Automatically filled. Time + date only for OOSTA, PT and VI
Mode summary report	field + 🖾		Automatically filled. Handheld or Web only for OOSTA; PT and VI
Date casing collection note	field		Automatically filled. Time + date only for OOSTA
Mode casing collection note	field		Automatically filled. Handheld or Web only for OOSTA
Date detail collection note	field		Automatically filled. Time + date only for VI and PT
Mode detail collection note	field		Automatically filled. Handheld or Web only for VI and PT
Date results received	Field	N	Automatically filled.
Date report generated	Field	N	Automatically filled.
Date report approved	Field	N	Automatically filled.
Date report presented	Field	N	Automatically filled.
Report presented to	field	N	Free text field

5.6.3 In Service Tire Analysis – Vehicle overview

F-inspect-15   Page is accessible from:

- Inspection Preparation.

F-inspect-16   The Vehicle overview window contains the following buttons:

- Open in service tire inspection.
- New inspection
- Delete inspection

F-inspect-17   In the section General information contains the following fields:

Field	Response field specification	Mandatory	Special specifications
Fleet name	field	Y	read only
Inspection id	flied	Y	read only
Location name	field	Y	read only

F-inspect-18   The Vehicle overview list contains the following columns:

Vehicle identification, Vehicle Type, Vehicle brand, Odometer, Configuration, Potential delay, immediate actions, Remove for repair, Remove for retread.

5.6.4 In Service Tire Analysis - Tire Readings

F-inspect-19   Page is accessible from:

- Vehicle overview list.

F-inspect-20   The In Service tire readings screen is subdivided into a part that displays the General information and a section that includes the Vehicle information.

F-inspect-21   The **Vehicle information** section of the inspection screen contains the following fields:

When the user selected one vehicle from the overview list the vehicle fields are filled. When no vehicle was selected in the overview list the user can create a new vehicle

Field	Response field specification	Mandatory	Special specifications
Vehicle identification	field + ☒	Y	
Vehicle type	field	Y	Not editable
Vehicle brand	field	Y	Not editable
Odometer reading	field	Y	
Model	field + ☒	N	

Year of build	field	N	
Date out of service	field	N	
Comment	field	N	

F-inspect-22   The **Tire information** section of the inspection screen contains the following fields:

Field	Response field specification	Mandatory	Special specifications
Axle identification	Picture	Y	Tire position
Tire position	field	Y	Automatically filled
Tire size spare tire size	field	Y	Display one, depending on the selection in the tire position picture.
Casing manufacturing	field + ▦	Y	
Original series	field + ▦	Y	
Retread manufacturing	field + ▦	N	
Retread design	field + ▦	N	Only when retread manufacturing is selected
Tread depth	field	N	+ display the original tread depth not editable.
Pressure	field	N	+ display the proper pressure

F-inspect-23   The **Visual inspection** section of the inspection screen contains the following fields:

Field	Response field specification	Mandatory	Special specifications
Missing valve cap	Selection field		When selected the corrective actions field is displayed.

Leaking valves	Selection field		When selected the corrective actions field is displayed.
Inaccessible valve	Selection field		When selected the corrective actions field is displayed.
Misaligned handholds	Selection field		When selected the corrective actions field is displayed.
Loose wheel nuts / rust streaks	Selection field		
Damaged rim	Selection field		
Regrooved	Selection field		
Curveband	Selection field		
Oil leak	Selection field		
Misalignment	Selection field		
Comments	field		

F-inspect-24   In the section Tire conditions the fields are displayed:

Field	Response field specification	Mandatory	Special specifications
Condition code	field	Y	.
Cause	field	Y	
Immediate action report	Selection button Y / N	Y	Per condition.
Remove for repair	Selection button Y / N	N	Per condition
Remove for retread	Selection button Y / N	N	Per condition.
Potential delay	Selection button Y / N	N	Per condition.

F-inspect-25   All selected conditions are displayed in a overview list.
                The overview list contains the following columns:

                Condition, Cause, Immediate action, Remove for repair, Remove for
                retread, Potential delay.

F-inspect-26   If one or more of the actions is selected for the condition, also this action
                will be selected in the tire summery.

F-inspect-27   At the bottom of this screen the tire summery is displayed with the for
                actions that can be taken:

                Remove for repair, remove for retread, immediate action, potential delay.

F-inspect-28   If there are different tire sizes specified on the same axle automatically
                select the option misalignment.

F-inspect-29   If the tread depth is smaller than the tire pull point automatically select the
                action remove for retread.

F-inspect-30   With a next button or by clicking on the next tire in the configuration picture
                the user can save the readings and clear the fields to enter new readings of
                the next tire.

F-inspect-31   When selecting a new vehicle to inspect the system checks if all tires are
                completed. Display message when not all tires of this vehicle are inspected.
                Don't block the possibility to select a new vehicle and enter the readings of
                that vehicle. Save the previous readings as uncompleted in the overview
                list.

5.6.5 Out Of Service Tire Analysis readings

F-inspect-32   Page is accessible from:
                        Inspection preparation.

F-inspect-33   The **Out Of Service Tire Analysis readings** window contains the
                following buttons:

                •   New tire reading
                    Saves the current inspection information
                    Clears all the fields
                    Automatically fills in the fields Created by, Registration date,

                •   Save inspection:
                    Saves the current information
                    Automatically retrieves a new id from the server.

                •   Delete tire readings
                    Deletes the selected Inspection after confirmation (Delete yes/no)

                •   Go to tire overview list.

F-inspect-34   The inspection readings screen is separated in a General information section
                and a section Tire information with Condition codes per tire.

F-inspect-35   The **General information** section of the inspection screen contains the
                following fields:

Field	Response field specification	Mandatory	Special specifications

Inspection	field	Y	Type + id Not editable
Fleet name	field	Y	+ id Not editable
Location	field	Y	Not editable

F-inspect-36   The **Tire information** section of the inspection screen contains the following fields:

Field	Response field specification	Mandatory	Special specifications
Tire size	field + ▨	N	
Casing manufacturing	field + ▨	N	
Original series	field + ▨	N	
Drive / trailer	Selection button	N	
DOT serial nr	field	N	
DOT manufacturing date	field	N	
Number of rereads	field	N	
Retread manufacturer	field + ▨	N	
Retread design	field + ▨	Y/N	Mandatory when retreaded.
Retread DOT: dealer	field + ▨	N	
Retread DOT: date	field	N	
Current tread depth	field	Y	+ measure unit default from the inspector.

F-inspect-37   The **Conditions per tire** section of the inspection screen contains the following fields:

Field	Response field specification	Mandatory	Special specifications
Re-grooved	Selection box	N	
Repairable	Selection box	N	

Retreadable	Selection box	N	
Condition code	field + ▦	Y	
Cause code	field + ▦	N	
Condition area code	field + ▦	N	
Responsibility code	field + ▦	N	
Out of service cause	Selection button Y / N	N	

F-inspect-38   All conditions of the inspected tire are visible in an overview table with the causes and responsibility.

5.6.6 Vehicle inspection attributes

F-inspect-39   Page is accessible from:
        Inspection preparation

F-inspect-40   The **Vehicle inspection** attribute window contains the following buttons:

- Save vehicle inspection attribute list:
  Saves the modified attribute list.

- New attribute:
  Opens the <u>attribute maintenance</u> window to create a new vehicle attribute.

- Move up:
  Moves a selected attribute up in the list of attributes in the same category.

- Move down:
  Moves a selected attribute down in the list of attributes in the same category.

- Delete:
  Deletes the selected Inspection after confirmation (Delete yes/no)

The vehicle inspection attribute screen is subdivided into a section General information and a section Attributes categories.

F-inspect-41   The **General** section of the attributes screen contains the following fields:

Field	Response field specification	Mandatory	Special specifications
Fleet name + id	field	Y	Default from the prepared inspection
Location + id	field	Y	Default from the prepared inspection

Inspection + id	field	Y	Default from the prepared inspection
Fleet vehicle type	field + ▦	Y	

F-inspect-42   The Attribute categories section of the attribute screen contains the following fields: (in this part the selected attributes need to be sorted in different categories)

Field	Response field specification	Mandatory	Special specifications
Attribute	field + ▦	Y	minimum 1 selection is mandatory
Category	field + ▦	Y	
Category sequins	field	N	numeric field
Attribute sequins	field	N	numeric field

F-inspect-43   At the top of the screen all selected attributes are listed in a table sorted by category;

5.6.7 Vehicle inspection readings

F-inspect-44   Page is accessible from:
                    Vehicle inspection preparation.

F-inspect-45   The **Vehicle inspection** window contains the following buttons:

- New inspection preparation
  Saves the current inspection information
  Clears all the fields
  Automatically fills in the fields Created by, Registration date,

- Save inspection:
  Saves the current information
  Automatically retrieves a new id from the server.

- Open inspection
  Displays the Inspection information of the selected inspection.

- Delete Inspection
  Deletes the selected Inspection after confirmation (Delete yes/no)

- New Fleet:
  Opens the Fleet window to create a new fleet.

- New Location:
  Opens the Location window to create a new location.

- Insert new vehicle Readings:
  Opens the readings form to insert all readings.

- Print Blank form.
  Prints blank Vehicle inspection forms

F-inspect-46   The screen shows a list with all selected attributes per category next to the
                attribute name there is a selection box displayed to indicate if the attribute
                occurred. The next selection box of the corrective action indicates if the
                occurrence is corrected.

5.6.8 Performance testing Vehicles

F-inspect-47   Page is accessible from:
                        Inspection preparation

F-inspect-48   The button **Vehicles to inspect** in the preparation screen, opens the list
                "inspection vehicle overview". This window displays all inspected vehicles.

F-inspect-49   The vehicle overview list displays the following columns:

                Vehicle type, Vehicle identification, Brand.

F-inspect-50   The Vehicle overview screen contains a button New Vehicle, this opens the
                screen **Vehicle maintenance**, to create a new Location vehicle.
                See Vehicle .

                The new created vehicles are added to the vehicle overview list.

F-inspect-51   From this creation Location vehicles screen the user can click on the button
                tire readings to insert the tire information and the performance tire readings.

F-inspect-52   By selecting one vehicle form the overview list and clicking on the button
                insert readings per tire displays the tire configuration picture.

5.6.9 Performance testing Tire Readings

F-inspect-53   By selecting one tire from the tire configuration picture the user can also
                enter the tire information and tire performance readings.

F-inspect-54   The tire readings screen contains the following fields:

Field	Response field specification	Mandatory	Special specifications
Tire configuration picture	picture	Y	select one tire
Dot serial nr	field	N	
Dot manufacturing nr	field	N	
Tire size	field + ▨	N	
Casing manufacturing	field + ▨	N	
Original series	field + ▨	N	

Retread manufacturing	field + ▩	N	
Retread design	field + ▩	N	
Measure date	field	Y	Default filled with today's date, editable When changed for the first tire of the vehicle default displayed for the next tires.
Measurements	fields	N	Minimum 3 and maximum 12 measurements.

F-inspect-55   Tires that are inspected will be added to the tire overview list.

5.6.10 Tire overview list

F-inspect-56   The tire overview list contains the following columns:

- tire identification,
- average of the entered readings per inspection date,
- the odometer value per inspection date

5.7 Report registration

5.7.1 Look for Reports

F-inspect-57   Page is accessible from:

Fleet information

Location information

Home page

F-inspect-58   The Look for reports screen contains the following fields:

Field	Response field specification	Mandatory	Special specifications
Inspection type	field + ▦	N	
Inspection id	field	N	
Status	field + ▦	N	
Fleet	field + ▦	N	
Location	field + ▦	N	
Country	field + ▦	N	
Dealer	field + ▦	N	
Language	field + ▦	N	

5.7.2 Inspection selection for the Report creation

F-inspect-59   Page is accessible from:

Fleet information

Location information

Home page

F-inspect-60   Inspection selection window is subdivided into general section where the user selects the fleet and the inspection type. The selected inspections are displayed in an overview list.

F-inspect-61   Creating a report starts from an overview list of all inspections of one fleet sorted by youngest first where the user can select the inspections that need to be consolidated in one report.

F-inspect-62   The overview list contains the following columns:

Inspection, Date,

F-inspect-63   A fleet or location can only access the reports created for that fleet or location in an overview list. Without a look for function.

F-inspect-64   The report creation screen is subdivided into a section report information and a list of all selected components. The components are selectable from a combo-box and for each component can a custom text be entered. For every report the user can also enter a main custom text.

F-inspect-65   The Report creation screen contains the following fields.

Field	Response field specification	Mandatory	Special specifications
Inspection type	field + ▦	Y	
Inspection id	field	N	
Language	field + ▦	Y	
Main custom text	field	N	
Component	field + ▦	Y	
Component custom text	field	N	

F-inspect-66   The overview list of all selected report components contains the following columns:

Component name

Custom text Y / N

F-inspect-67   The **Report creation** window contains the following buttons:

- New report
  Saves the current report information
  Clears all the fields
  Automatically fills in the fields Created by, Registration date,

- Save report:
  Saves the current information
  Automatically retrieves a new id from the server.

- Open report
  Displays the selected report.

- Delete component
  Deletes the selected component after confirmation (Delete yes/no)

- New component:
  Possibility to select a new component and enter the component custom text..

- Print report.
  Prints the report.

5.8 Report Components

6. System Functions Handheld

6.1 Handheld Reports

6.1.1 Immediate actions

6.1.2 Work order

Exhibit F
(21 pages)
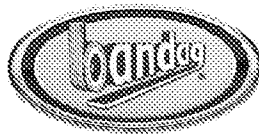
Business Requirements

GFAT - Global Fleet Analysis Tool

Version 1.0

Replaces :	*none*
Last saved date :	01/16/01

	Role	Name	Date	Signature
Author	Document Proposal	Yolanda Kerkhofs David De Vloo (Real Software)		
Review	Development Responsibility	Johan Bosschaerts (Real Software)		
Review	Sign for Review			
Approval and Release	Sign for approval of content, control for correctness and completeness			

Revision History		
Document Version	Date	Reason for Update
0.1	November 2, 2000	First draft
1.0	November 3, 2000	First release

<u>Revision List</u>

Name - Date - Version

Paragraph	Description

Table of Contents

1. Project idea

1.1 Project Goal

Design and develop a tool to:

❑ Help Bandag and Bandag dealers collect, organize, and report current Fleet tire conditions in a structured and efficient way in order to facilitate analysis, suggest corrective/improved courses of action and provide for unique selling propositions based on providing actionable information.

❑ "Roll-up" results from Fleet locations globally into summary and comparative reports, and supply the reports in the primary language of the customer.

❑ Improve the data collection process and accuracy of the collected data, reporting processes by reducing costs and improving turn around time.

❑ Integrate the current capabilities of the Fleet tire related systems.

1.2 Project Definition

> **The overall intention of this project is to provide a sales tool towards Bandag and Dealers, this by acting as a professional services organization.**

Overall objectives are:

REDACTED

❑ Management of Fleet Tire Program
❑ Audit tire program versus fleet specs
❑ Benchmarking fleet tire program

REDACTED

❑ Product evaluation

REDACTED

2. Project teams

2.1 The Bandag team

- Tim Chen   Project sponsor
- Mark Winkler   Fleet program manager
- Dennis Hall   Manager Client/Server Development
- Troy Fridley   I.T. Product Manager
- Lauri Ferreira   Overall project manager
- Kim Minder   TMT administrative assistant
- Rick Price   TMS, Solutions Specialist (partial attendance)
- Ronald Smet   Manager Global Information Services
- Ulrika Areskoug   Fleet program analyst

2.2 The Real Software team

- Johan Bosschaerts   Software Manager, Project Manager
- Yolanda Kerkhofs   Analyst - Technical Writer
- David de Vloo   Programmer - Analyst
- Geert Klinckeart   Programmer - Analyst
- Paul Schuurmans   Programmer Handheld
- Kim Nevelsteen   Programmer Handheld
- Steven Ranquin   Programmer Web application

This is the team that is currently (not all full-time) working on the application. When the formal project kicks-off this team will be extended in context of functional, technical and planning requirements.

3. Setup of the Project

REDACTED

3.1.4 Production environment

Handheld device specifications:
- ❑ Intermec 6110
- ❑ Windows CE 2.1.2 or 3.0
- ❑ Sybase Ultra light
- ❑ Portable printer (thermal and inkjet) (The thermal printer is the O'neil 4" model

Server environment:
- ❑ Microsoft NT Server 4.0
- ❑ Microsoft Transaction Server 2.0
- ❑ IIS 4.0
- ❑ SQL Server 7.0
- ❑ Internet Explorer 5.0 or higher as browser
  Except for fleet owners who can also download reports with IE 4.+ or Netscape 4.+
- ❑ Microsoft XML parser 2.6
- ❑ Microsoft Data Access Components 2.1

4. Logical entity relationship diagram
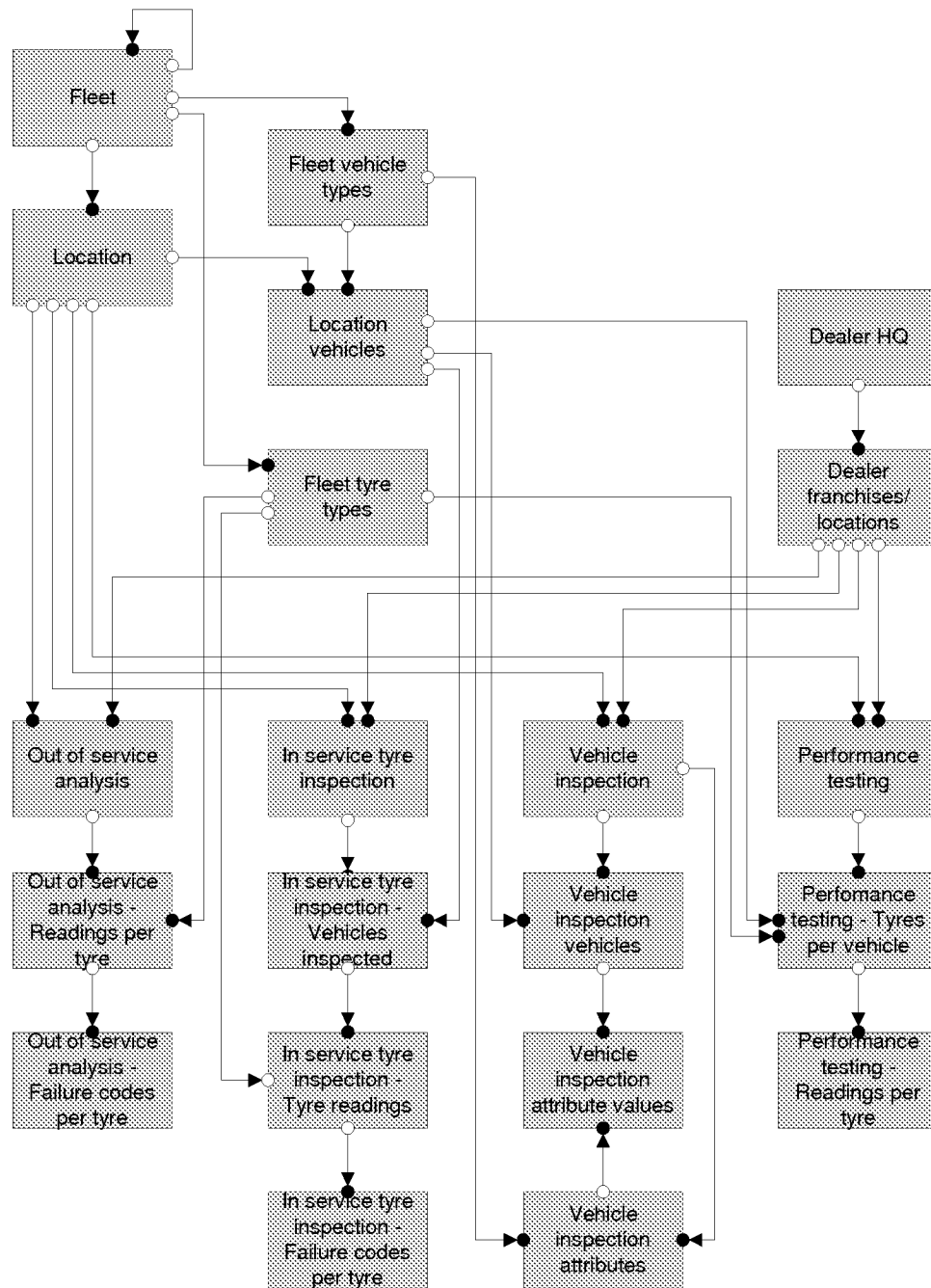
5. Process diagrams

5.1 Fleet Maintenance
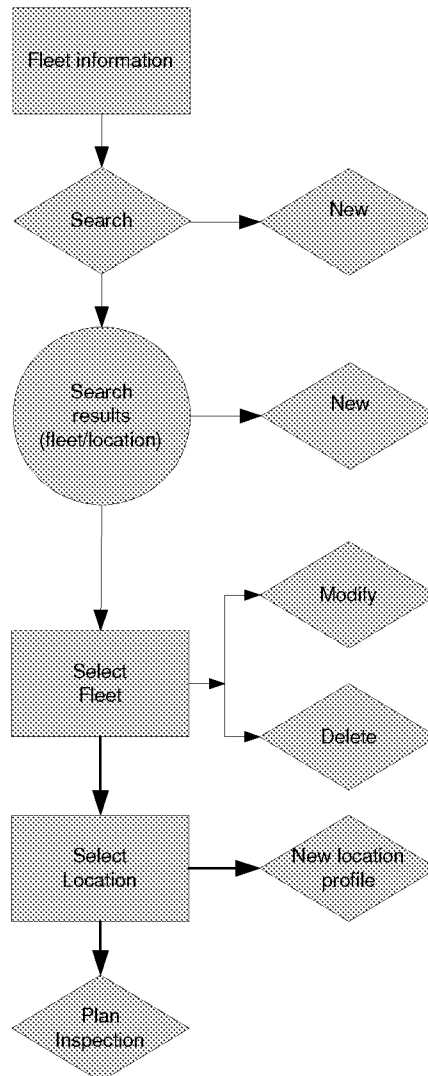
5.1.1 Fleet Maintenance

Allows maintenance of fleets in the context of planned and executed inspections, analysis, ... It is not the purpose to use this fleet definition to do basic or extended sales, technical or other follow-up. Other solutions like GCMS or DCMS cover that piece of functionality.

The fleet maintenance function contains following sub-functions:
- ❑ Search of a fleet
- ❑ Fleets lists

❏ The basic maintenance functions: add, modify, delete

Fleets can also be created by importing data from the GCMS/DCMS database.

5.1.2 Location Maintenance

Allows Maintenance of the location or locations that are connected to a fleet. The maintenance includes the fleet identification itself, vehicle types and tire types which also belong to the fleet profile. A new fleet is often created in two phases:

❏ Phase 1: when a new inspection or analysis is planned the user has often only limited data to create the fleet profile and no information at about the vehicle types or tire types.
❏ Phase 2: after or while the inspection is performed the fleet data is completed on all levels together with the analysis or inspection data itself.

To support this phased approach the user can after a phase 1 data entry either:

❏ Print a location form that contains all known data and leaves other data blank (refer to the section on Print location profile for more information)
❏ Synchronize the known information to the handheld and complete the information there (refer to the section on Synchronize down for more information)

The vehicles that are on the location will be added in context of an in service tire analysis, performance testing and/or vehicle inspection.

Availability is as follows:
❏ Locations profile creation is only available on-line
❏ Locations profile maintenance other than creation, location vehicle type maintenance and fleet tire maintenance are available both off-line and on-line

5.1.3 Dealer Maintenance

The dealer maintenance system provides a basic GFAT registration of dealers HQ and dealer Locations / Franchises. Dealers that participate in the GFAT electronic process also have to be defined in the user directory entity.

Because both Bandag EHRD and Bandag Inc have there own legal dealer systems the maintenance may be interfaced with those systems. The GFAT local system also includes for Bandag potential dealers.
Dealer maintenance is only available on-line to Bandag people. If a dealer also participates in the electronic GFAT he can also read/review its own occurrence(s).

As far as add, change and review functionality is concerned, dealer maintenance is separate from the system and will be performed in a traditional way.

5.2 Inspection Maintenance
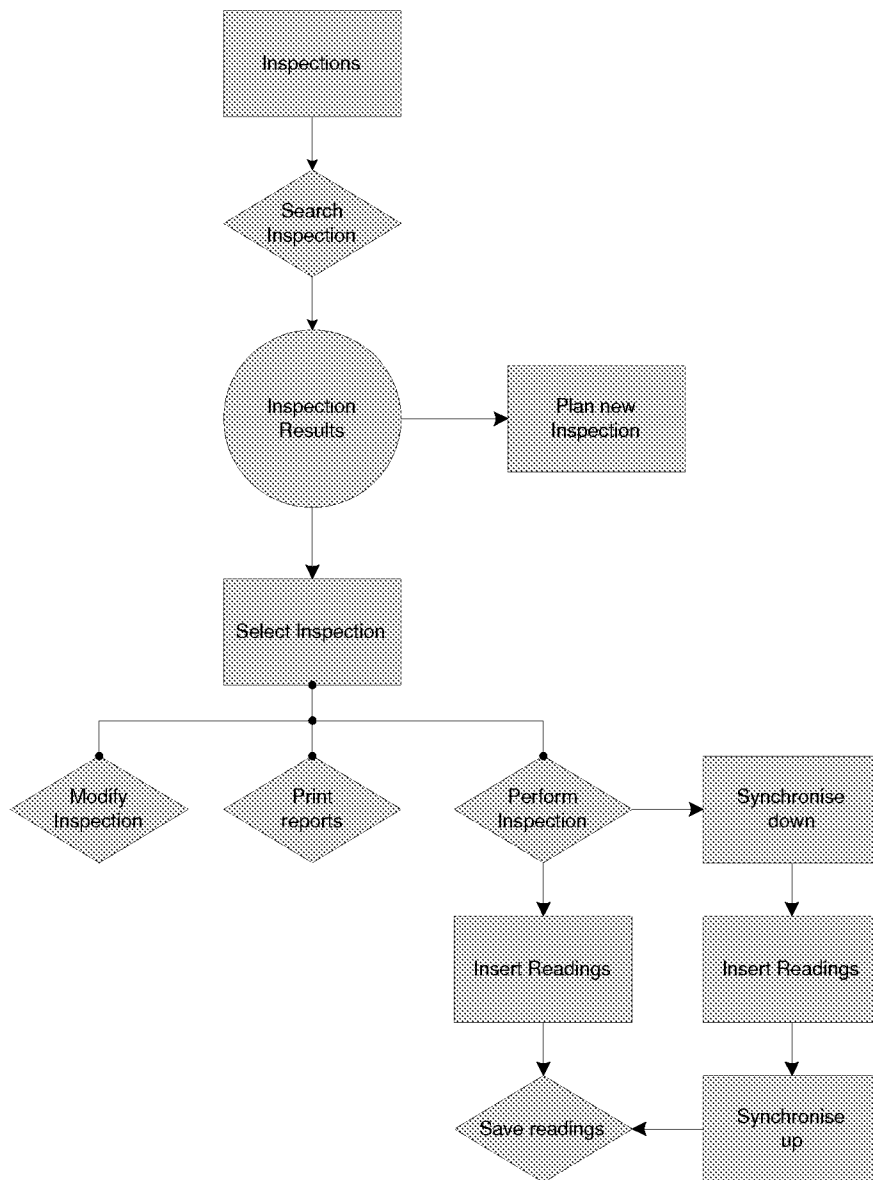
5.2.1 Organize a new inspection / analysis:

Via this function a Bandag or dealer, which has access to the fleet, can organize a new inspection / analysis on-line. That is entering basic Inspection / analysis data. Date changes or annulations of an inspection / analysis should be done by this function.

5.2.2 Print blank inspection / analysis forms

This function purpose is to provide the ability to print one or more blank inspection forms that allow data recording on hardcopy forms. Blank forms means that

Inspection header / known data is filled but detailed inspection data per vehicle is blank.

The blank Inspection form document will be prepared as a Microsoft Word template with data fields and bookmarks as placeholders for the header data. A template should be prepared for each document language. All known data will be filled in the template; unknown data will be left blank when merged.
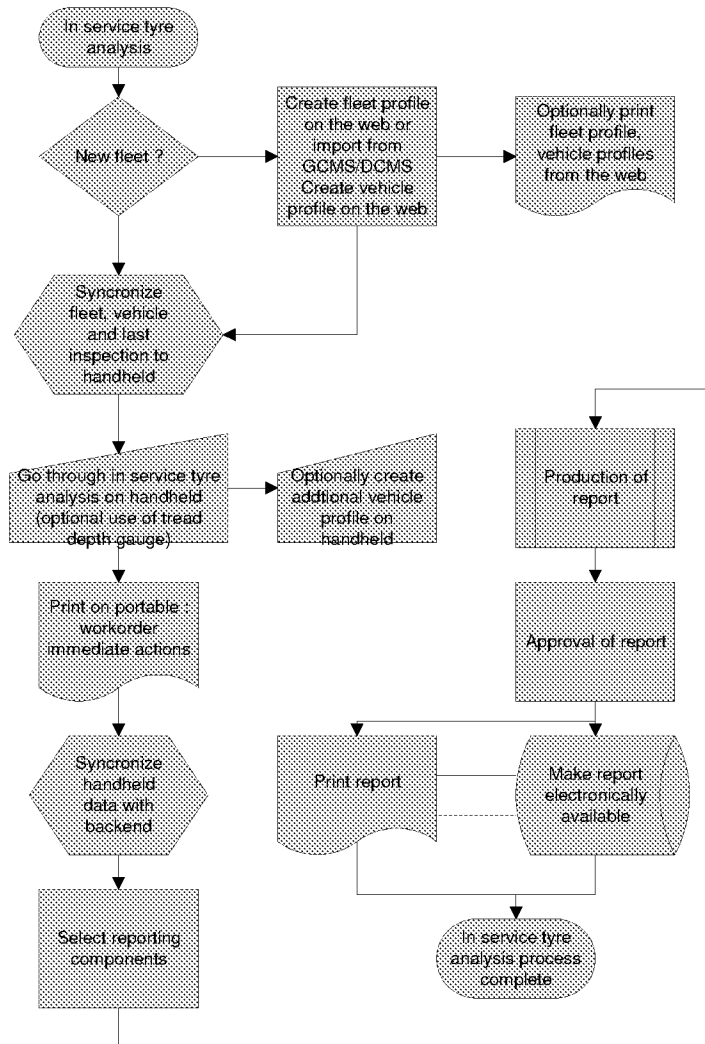
5.2.3 Out of service tire analysis using the web
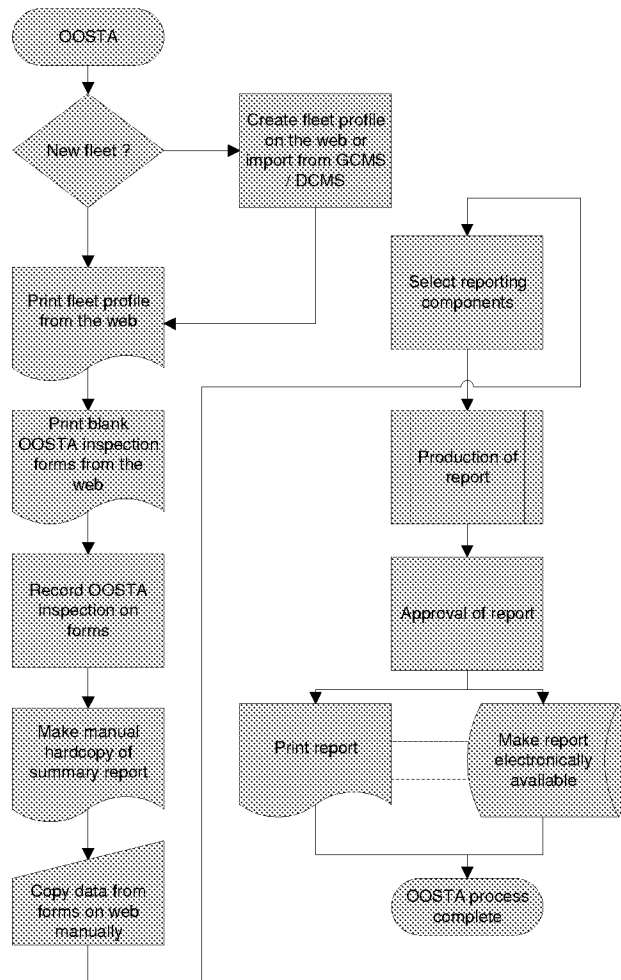
This Out of service tire analysis registration on the Web allows maintenance of fleet tire types and all native out of service tire analysis data.

All out of service reports can be printed on-line or made electronically available for the fleet, location and dealers. See the list of reports on page 24.
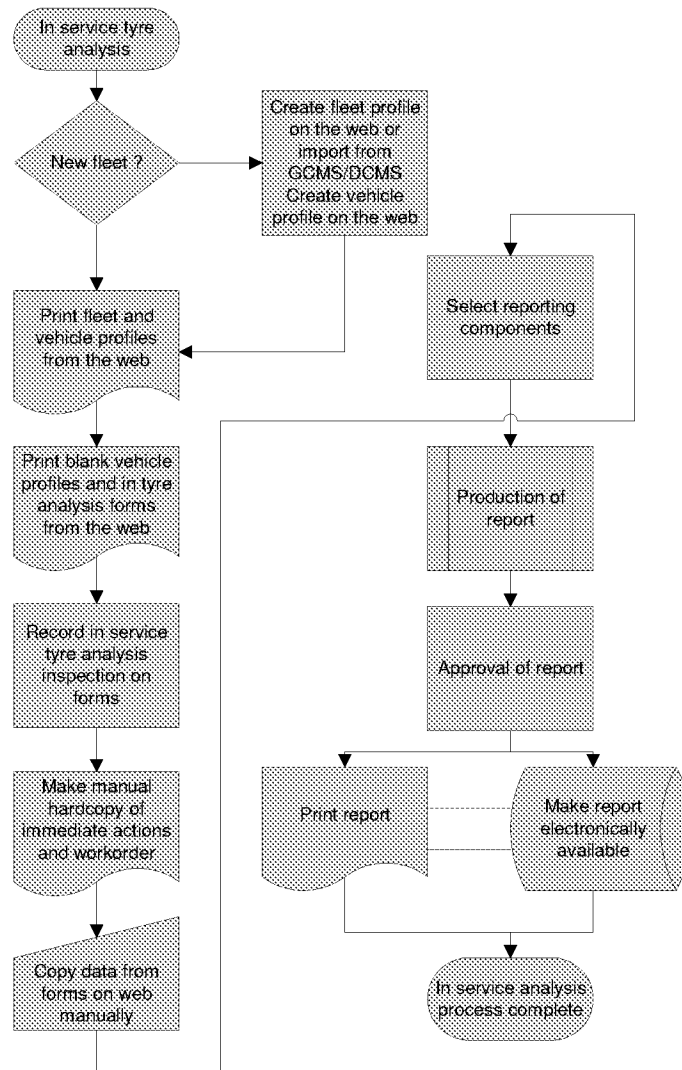
5.2.4 Out of service tire analysis using handheld
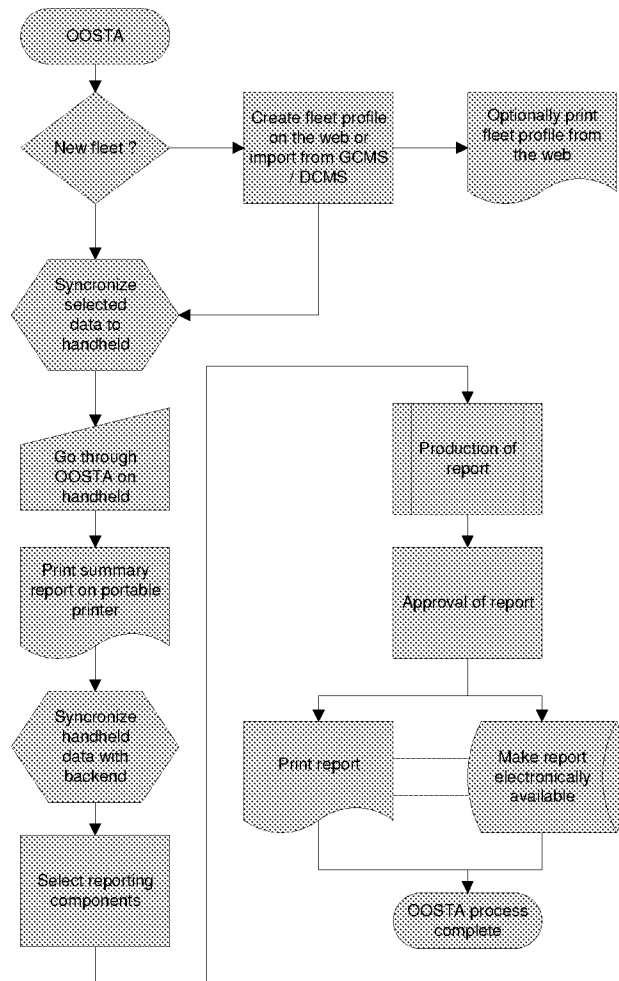
This Out of service tire analysis registration on the hand-held computer allows maintenance of fleet tire types and all native in service tire analysis data.

The collection of data itself should be preceded by the download of known inspection data from on to the handheld database, and succeeded by the upload of registered data to the back-end application.

Off-line the collection note can be printed on a portable printer.

5.2.5 Out of service tire analysis using hardcopy forms
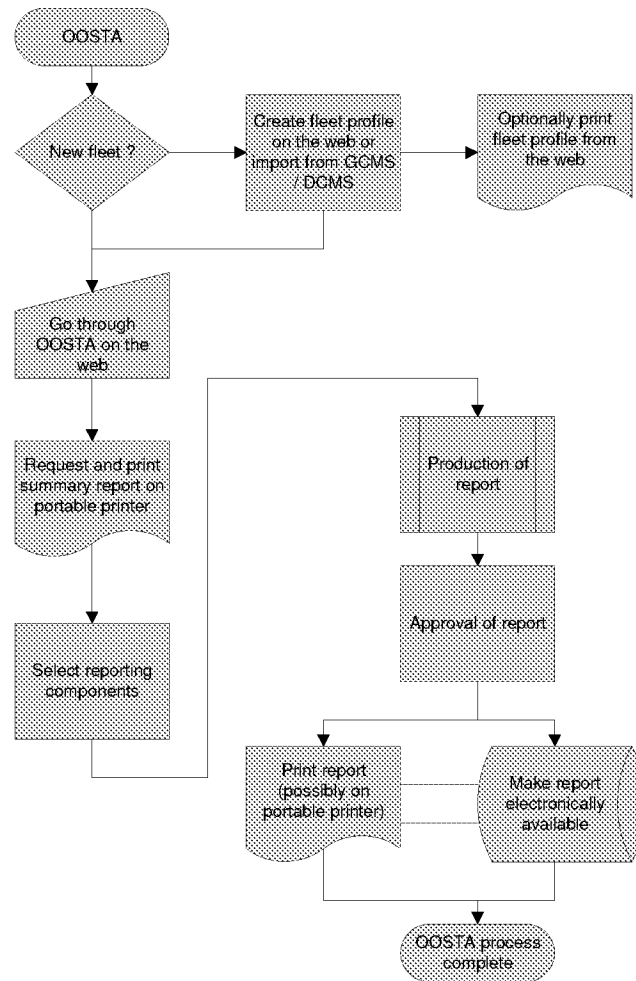
This Out of service tire analysis registration on the hard copy form allows maintenance of fleet tire types and all native in service tire analysis data.

The known inspection data on the hard copy forms should be registered manually trough the web into the back-end application.
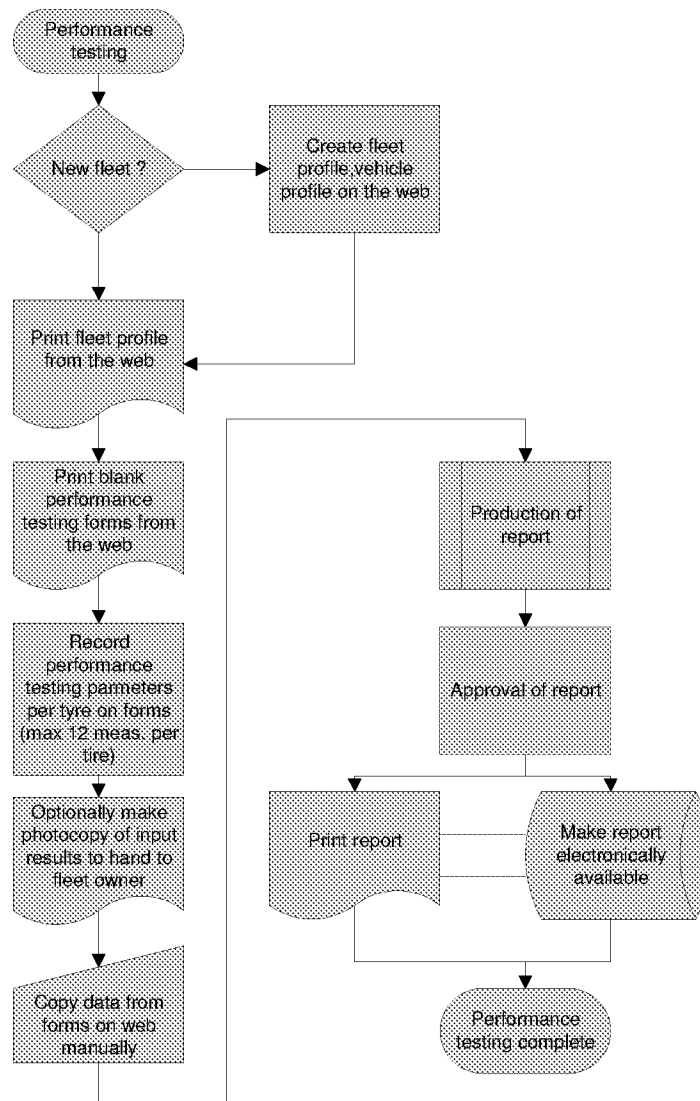
5.2.6 In service tire analysis using the web
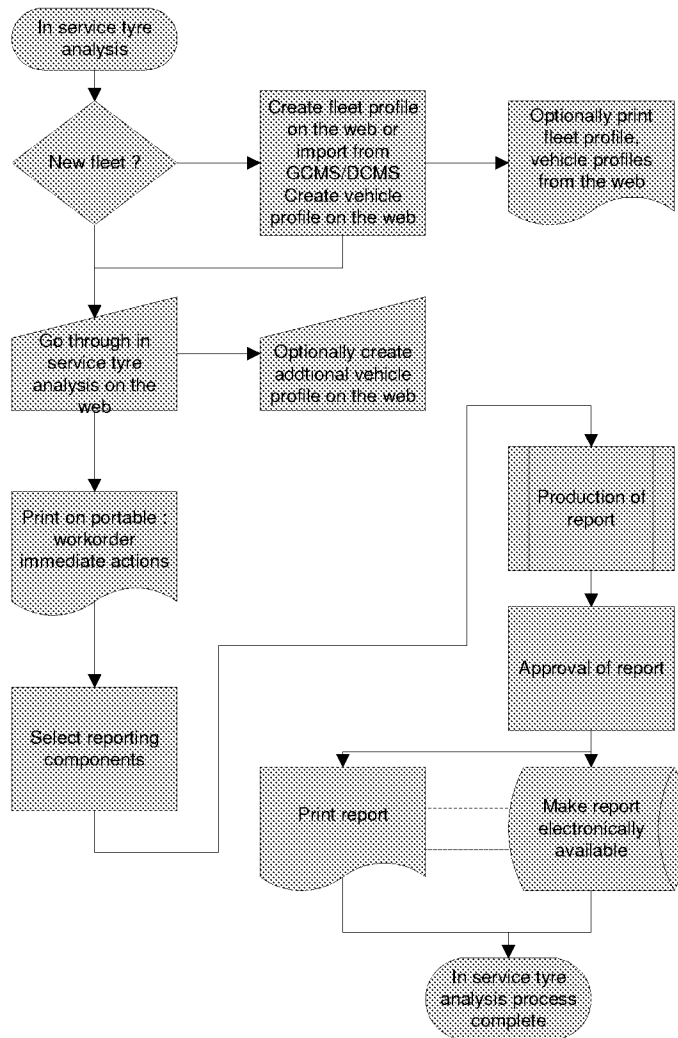
This in service tire analysis registration on the Web allows maintenance of fleet vehicle types, fleet tire types and all native in service tire analysis data.

The in service tire analysis reports listed in the Report distribution list of the application functions can be printed on-line or made electronically available for the fleet, location and dealers. See the list of reports on page 24.

5.2.7 In service tire analysis using handheld

This in service tire analysis registration on the hand-held computer allows maintenance of fleet vehicle types, fleet tire types and all native in service tire analysis data.

The collection of data itself should be preceded by the download of known inspection data from on to the handheld database, and succeeded by the upload of registered data to the back-end application (refer to synchronization paragraphs).

The immediate actions report and Work order report can be printed off-line on a portable printer.

5.2.8 In service tire analysis using hardcopy forms

This in service tire analysis registration on the hard copy forms allows maintenance of fleet vehicle types, fleet tire types and all native in service tire analysis data.

The known inspection data on the hard copy forms should be registered manually trough the web into the back-end application.

5.2.9 Performance testing using handheld computer
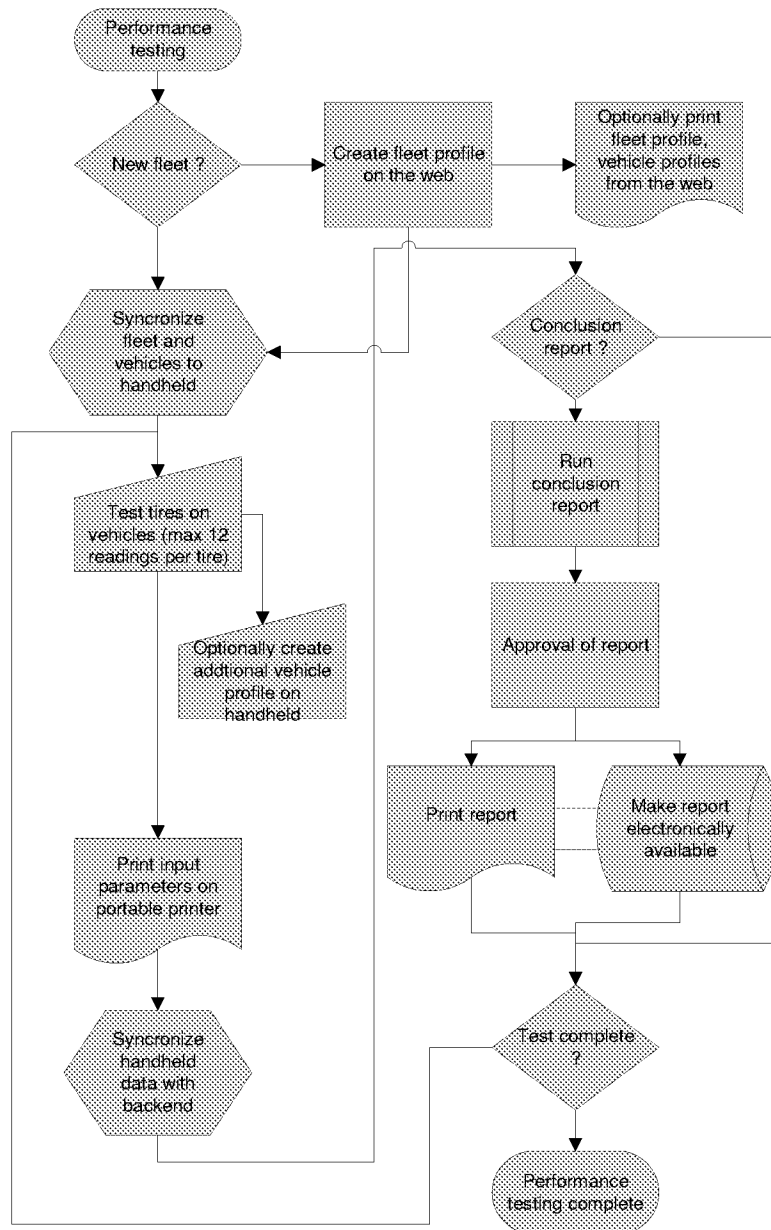
This Performance testing registration on the handheld allows maintenance of fleet vehicle types, fleet tire types and all native in service tire analysis data.

Max 12 readings per tire per date readings are taken, no limit to number of dates if possible. The print input parameters should also include a basic summary of test set-up. We need to be able to generate current test results after 3 dates worth of measurements have been entered. Basically, "run conclusion" report could occur multiple times throughout the life of the evaluation. I am not sure, but assume for now that approval would need to occur at each iteration?

5.2.10 Performance testing using hardcopy forms

Performance testing

New fleet ?

Create fleet profile,vehicle profile on the web

Print fleet profile from the web

Print blank performance testing forms from the web

Record performance testing parmeters per tyre on forms (max 12 meas. per tire)

Optionally make photocopy of input results to hand to fleet owner

Copy data from forms on web manually

Production of report

Approval of report

Print report

Make report electronically available

Performance testing complete

This Performance testing registration on the hard copy forms allows maintenance of fleet vehicle types, fleet tire types and all native in service tire analysis data.

The known inspection data on the hard copy forms should be registered manually trough the web to the back-end application.

Max 12 readings per tire per date readings are taken, no limit to number of dates if possible. The print input parameters should also include a basic summary of test set-up. We need to be able to generate current test results after 3 dates worth of measurements have been entered. Basically, "run conclusion" report could occur multiple times throughout the life of the evaluation. I am not sure, but assume for now that approval would need to occur at each iteration?

5.2.11 Vehicle inspection using a handheld computer
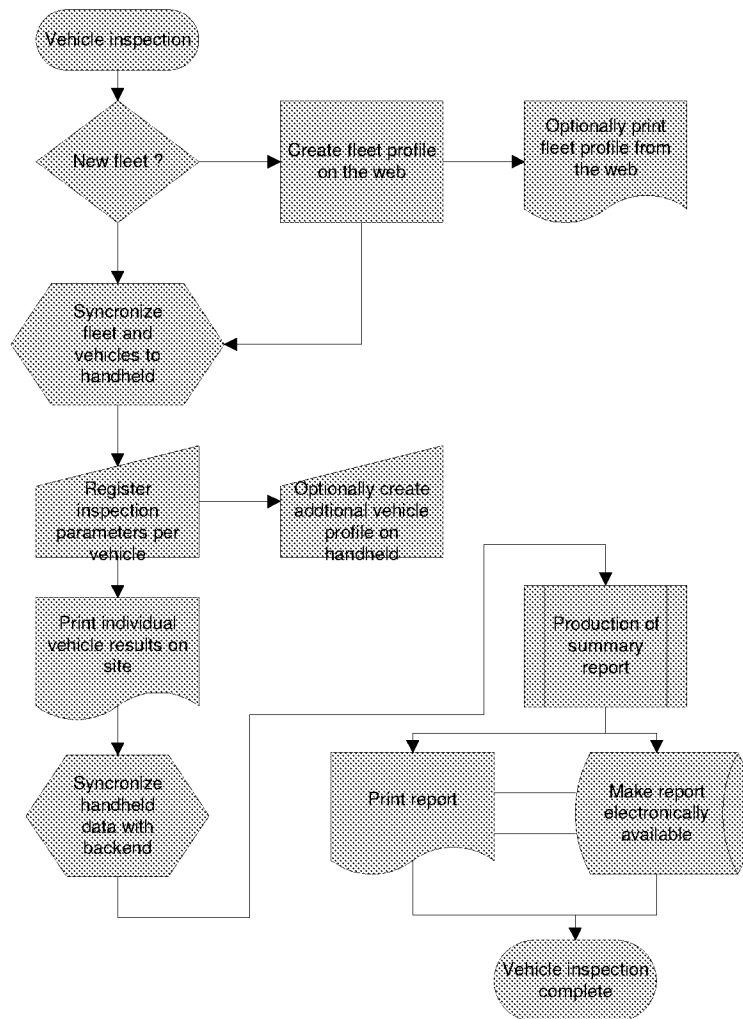
This inspection can be combined with an in service tire inspection or can be performed stand-alone.

The items that need to be check for a vehicle type can only be registered on-line. The vehicle inspection report (printed on-line) will display only those items in the selected sequence.

5.2.12 Vehicle inspection using hardcopy forms
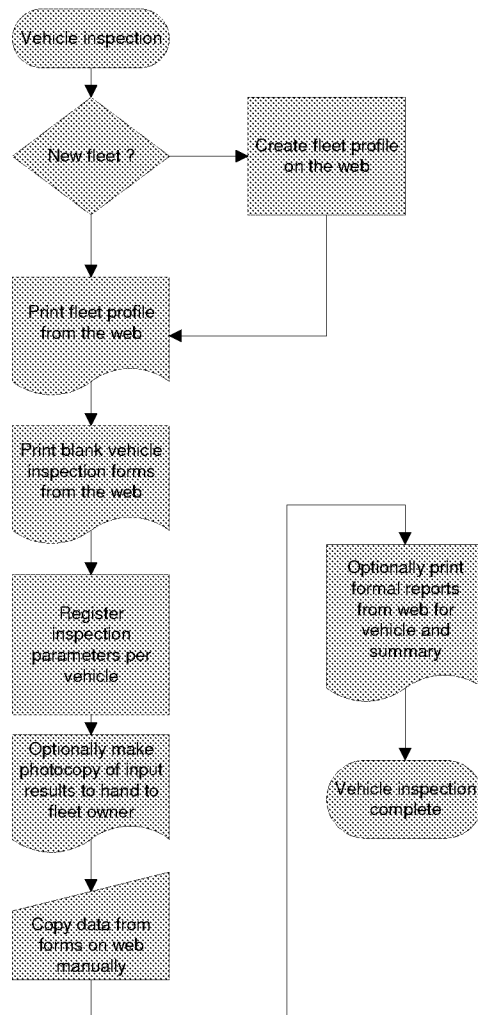
5.3 Reporting

Reports will be formatted for interactive Web-based consultation, opposed to the present paper report format.

Reports will be automatically verified by the system to avoid distribution of Bandag-unfavorable results.

A data mart will be made for higher level reporting such as consolidation, comparison, time stamp, etc.

There will be three groups of reports:

- Data entry verification reports, printed remotely, at the time of entry and/or to be left with the customer as confirmation of the visit
- Pre-formatted reports, corresponding to the present reporting formats for Fleet Inspection, OOSTA and Mileage Tracker
- Data Mart type reports for data analysis purposes, consolidation, comparison, etc.

Exhibit G

(6 pages)

The Antwerp Tower Meeting Notes

GFAT - Global Fleet Analysis Tool

Version 0.1

Replaces :	*none*
Last saved date :	01/25/01

	Role	Name	Date	Signature
Author	Document Proposal	Yolanda Kerkhofs (Real Software)		
Review	Development Responsibility	Johan Bosschaerts (Real Software)		
Review	Sign for Review	Johan Bosschaerts (Real Software)		
Approval and Release	Sign for approval of content, control for correctness and completeness			

Revision History		
Document Version	**Date**	**Reason for Update**
0.1	November 20, 2000	First draft
1.0	November 23, 2000	First version

Revision List

Name - Date - Version

Paragraph	Description

Table of Contents

Purpose

In this document the conclusions of the Bandag GFAT meeting are summarized.
Summary topics are organized in following topics: organizational, functional, technical, and other

Organizational Topics

Date of meeting: November 13, 2000 until November 16, 2000

Agenda:

- Monday afternoon :
  - discuss outstanding issues
  - review Ter Elst meeting notes
  - evaluate project approach / communication channels
  - contract issues.
- Tuesday (full day) : go in detail through our user requirements and functional documentation - prototyping of screens
- Wednesday (full day) : continue functional specification and prototyping discussion
- Thursday :
  - presentation voice solution by Patrick Salenbien - Lernout & Hauspie
  - briefing of Patrick Gypen in context of report layout / branding
  - technical issues (platforms, development, testing, synchronization, ...)
  - Discuss agenda / project plan for next period
  - agree (in detail) on deliverables and timing
  - fine-tune deliverables demo version
  - other

Participants to that meeting were:

- Dennis Hall   Manager Client/Server Development
- Troy Fridley   I.T. Product Manager
- Ronald Smet   Manager Global Information Services
- Ulrika Areskoug   Fleet program analyst
- Johan Bosschaerts   Real Software, Software Manager
- Yolanda Kerkhofs   Real Software, Analyst – Technical Writer
- David Devloo   Real Software, Analyst – Programmers
- Geert Klinckeart   Real Software, Programmer Handheld

- L & H guest speaker: Patrick Salenbien
- Image building guest speaker: Patrick Gypen

Other resources to this document:

❏ The notes made by Johan Bosschaerts during the meeting
❏ The Prototype screenshots of Web and Handheld application.
❏ The Functional Analysis
❏ Entity description document

Other existing documents that describe business requirements, functionality and project approach are used as knowledge base but are not processed into this Antwerp Tower meeting notes document. However, they will be used in the user requirements and functional specifications document.

Application packaging

The application has to be able to be sold 'in whole' or 'per module'. In the security setup the administrator can indicate which functions are available to a specific user. Only available functions will be shown to that user.

Hardware

Intermec 6110 handheld to test the GFAT application handed over to Real Software.

REDACTED

Exhibit H
(5 pages)
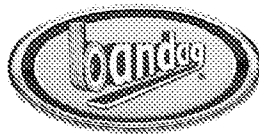
Report Analysis

Bandag FLEET ANALYSER

Version 0.2

Replaces :	*none*
Last saved date :	01/25/01

	Role	Name	Date	Signature
Author	Document Proposal	Yolanda Kerkhofs (Real Software)		
Review	Development Responsibility	Johan Bosschaerts (Real Software)		
Review	Sign for Review			
Approval and Release	Sign for approval of content, control for correctness and completeness			

Revision History		
Document Version	**Date**	**Reason for Update**
0.1	12/20/2000	First draft

Revision List

Name - Date - Version

Paragraph	**Description**

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